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SOLICITUD

PATENTE DE INVENCION

21 EXPEDIENTE Nº

03-388670

54 TÍTULO

SISTEMA DE ASSEGURAMIENTO DE BATERIA PARA VEHICULOS

DE PASO PARA NIÑOS

51 CLASIFICACIÓN INTERNACIONAL

B60R 1/04

71 SOLICITANTE

MAYTEL, INC.

DOMICILIO

El Segundo, California, Estados Unidos de América.

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REILTO FERNANDO

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1	SOLICITUD DE		
	☒ Patente de Invención		☐ Patente de Modelo de Utilidad
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	☒ Capítulo II		
2	SOLICITANTE (71)	Nombre MATTEL, INC sociedad constituida y existente bajo las leyes del Estado De Delaware Estados Unidos de América Dirección 333 Continental Boulevard, El Segundo, California 90245-5012, Estados Unidos de América Domicilio El Segundo, California, Estados Unidos de América	IDENTIFICACION C C ☐ NIT ☐ C E ☐ Otro ☐ Cual _____ Número _____
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10

Anexos

- ☒ Comprobante de pago de la tasa de presentación de la solicitud por \$ 400 000 oo
- ☐ Comprobante de pago por reivindicación de prioridad
- ☒ Documento que acredita la existencia y representación legal cuando el solicitante sea persona jurídica
- ☒ Poderes, si fuere el caso
- ☐ Documento de cesión del inventor al solicitante o a su causante
- ☐ Declaraciones
- ☒ Copia de la solicitud internacional (Resumen, descripción, reivindicaciones dibujos)
- ☒ Traducción de la solicitud internacional al castellano (Resumen descripción reivindicaciones, dibujos)
- ☐ Copia del examen preliminar efectuado por la IPEA.
- ☐ Traducción del examen preliminar efectuado por la IPEA
- ☐ De ser el caso, copia del contrato de acceso
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- ☐ De ser el caso, certificado de depósito del material biológico
- ☒ Arte final 12x12
- ☐ De ser el caso información sobre otras solicitudes de patente o títulos obtenidos en el extranjero por el mismo titular o su causante relacionadas parcial o totalmente con la invención de esta solicitud
- ☐ Otros

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FIGURA CARACTERISTICA.

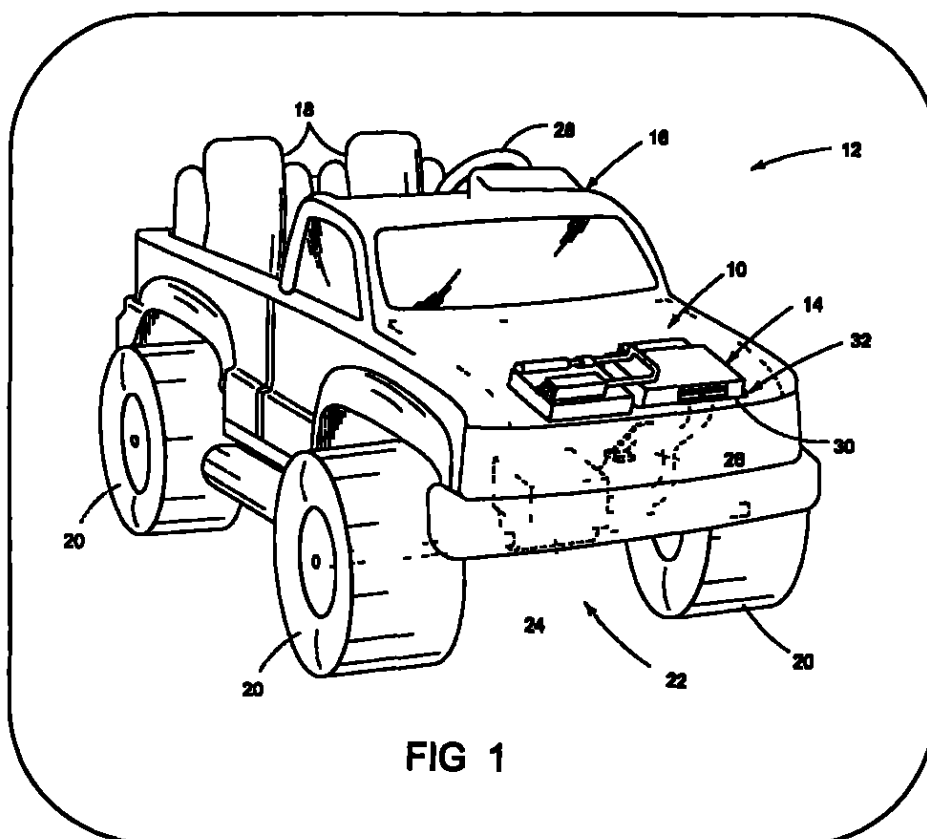


FIG 1

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Solicito la concesión de la patente,

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PTAS

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DOC DATE 11/05/2001

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KIMBERLY WHITE, EXAMINER
ASSIGNMENT DIVISION
OFFICE OF PUBLIC RECORDS

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ASSIGNMENT

WHEREAS, WE, DANIEL M DIGNITTI, of Hamburg, County of Erie, State of New York, GERALD P SITARSKI, of Grand Island, County of Erie, State of New York, and JOHN L JONES, JR., of East Aurora, County of Ene, State of New York, have invented certain improvements in a BATTERY RETAINING SYSTEM FOR CHILDREN'S RIDE-ON VEHICLES, for which a Patent Cooperation Treaty (PCT) Patent Application was filed on November 1, 2001, and was given Serial No PCT/US01/48058, and

WHEREAS, MATTEL, INC , a Delaware corporation, having its principal place of business in El Segundo, County of Los Angeles, and State of California, is desirous of acquiring an interest therein,

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which hereby are acknowledged, we, DANIEL M DIGNITTI, GERALD P SITARSKI and JOHN L JONES, JR , have sold, assigned and transferred, and by these presents do sell, assign and transfer unto MATTEL, INC the full and exclusive right to the said invention in the United States and its territorial possessions and in all foreign countries and the entire right, title and interest in and to any and all Letters Patent which may be granted therefor in the United States and its territorial possessions and in any and all foreign countries and in and to any and all related applications, divisionals, reissues, continuations and extensions thereof

We hereby authorize and request the Patent Office officials in the United States and any and all foreign countries to issue any and all of said Letters Patent, when

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granted, to MATTEL, INC , as the assignee of our entire right, title and interest in and to the same, for the sole use of MATTEL, INC , its successors and assigns

Further, we agree that we will communicate to the said MATTEL, INC or its representatives any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all related, divisional, continuation, substitution, renewal and reissue applications, execute all necessary assignment papers to cause any and all of said Letters Patent to be issued to MATTEL, INC , make all rightful oaths and generally do everything possible to aid MATTEL, INC , its successors and assigns, to obtain and enforce proper protection for said invention in the United States and in any and all foreign countries

IN TESTIMONY WHEREOF, I have hereunto set my hand this 5th
day of November, 2001


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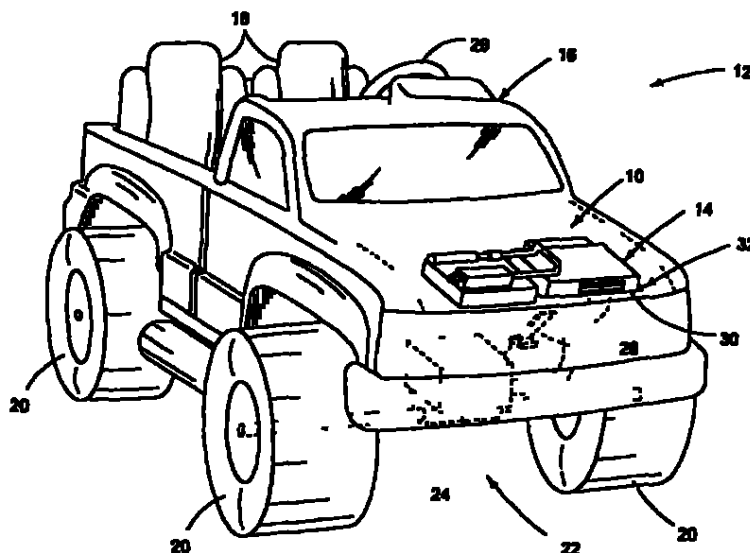
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[Continued on next page]

(54) Title BATTERY RETAINING SYSTEM FOR CHILDREN'S RIDE-ON VEHICLES



(57) Abstract A battery retaining system (Figure 1) for a children's ride-on vehicle (12). The system includes a retaining member (34) that is selectively movable between a first or nominal position in which the retaining member blocks removal of a battery assembly (14) from the body of the vehicle, and a second position in which the retaining member does not block removal of the battery assembly. The battery retaining system also includes a biasing member (40) coupled to the retaining member and configured to urge the retaining member from the second position toward the first position. In some embodiments, the battery retaining system is further adapted to retain portions of the vehicle other than the battery assembly.

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C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,632,201 (Kay), 30 December 1976 (30 12 86), all	1-42
AP	US 6,179,331 (JONES, JR et al) 30 January 2001 (30 01 01), all	1-42
AP	US 6,186,256 (DIGNITTI) 13 February, 2001 (13 02 01), all	1-42
☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex		
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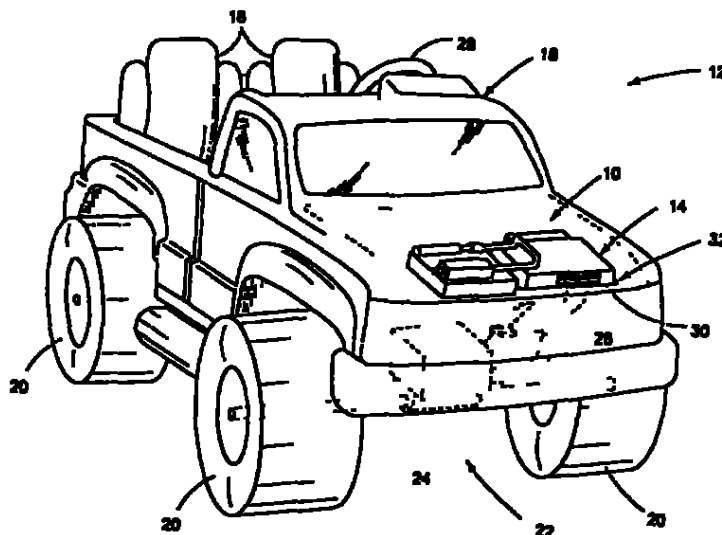
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CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,
TG).

[Continued on next page]

(54) Title BATTERY RETAINING SYSTEM FOR CHILDREN'S RIDE-ON VEHICLES



(57) Abstract A battery retaining system for a children's ride-on vehicle. The system includes a retaining member that is selectively movable between a first or nominal position in which the retaining member blocks removal of a battery assembly from the body of the vehicle, and a second position in which the retaining member does not block removal of the battery assembly. The battery retaining system also includes a biasing member coupled to the retaining member and configured to urge the retaining member from the second position toward the first position. In some embodiments, the battery retaining system is further adapted to retain portions of the vehicle other than the battery assembly.

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BATTERY RETAINING SYSTEM FOR CHILDREN'S RIDE-ON VEHICLES

Field of the Invention

The present invention is directed to children's ride-on vehicles, and more particularly, to a battery retaining system for children's ride-on vehicles.

Background

Battery-powered children's ride-on vehicles are popular toys for children. The batteries for these vehicles are usually carried within a compartment on the vehicle. Typically, the compartment is easily accessible so that the battery may be removed, such as for replacement or recharging.

To prevent injury or accident, the battery should be securely held within the compartment. If a battery overturns or becomes displaced within the compartment, the battery and/or the vehicle may be damaged. For example, the vehicle typically includes electrical wiring that connects the battery to one or more battery-powered components on the vehicle. An overturned battery may damage or displace the wiring, causing an electrical short or similar hazard. Further, a battery that is not secured within the battery compartment may fall out of the compartment and possibly injure the rider.

One method of securing the battery is to construct a battery compartment that is approximately the same shape and size as the battery. However, the battery may still be unintentionally removed from the compartment, such as if the vehicle tips over. Furthermore, the dimensions of the compartment may limit future battery designs.

Another securing method is to install a battery-retaining device on the vehicle to hold the battery in place by clamping across the battery. However, prior retaining devices have been difficult to use, have required tools to attach or remove, and/or have been prone to becoming dislodged from the battery thereby allowing the battery to move. Also, because it is removable, the device may be lost, or simply not reinstalled because of the time and effort required to reinstall the device.

Summary

The present invention provides a battery retaining system for a children's ride-on vehicle. The battery retaining system includes a retaining member that is selectively movable between a first, or nominal, position in which the retaining

member blocks removal of a battery assembly from the body of the vehicle, and a second position in which the retaining member does not block removal of the battery assembly. The battery retaining system also includes a biasing member coupled to the retaining member and configured to urge the retaining member from the second position toward the first position. In some embodiments, the battery retaining system is further adapted to retain portions of the vehicle other than the battery assembly.

Brief Description of the Drawings

Fig. 1 is a schematic, front isometric view of a children's ride-on vehicle having a battery retaining system in accordance with the present invention.

Fig. 2 is a magnified, fragmentary view of the vehicle of Fig. 1 showing details of the battery retaining system.

Fig. 3 is similar to Fig. 2 but shows the retaining member of the battery retaining system in its second or retracted position.

Fig. 4 is a fragmentary side elevation view of the battery retaining system of Fig. 2.

Fig. 5 is a fragmentary, isometric view of a different vehicle having an alternative arrangement of the battery retaining system of Fig. 1.

Fig. 6 is an isometric view of another embodiment of the battery retaining system according to the present invention.

Fig. 7 is a fragmentary top plan view of the battery retaining system of Fig. 6.

Fig. 8 is a cross-sectional view taken generally along the line 8-8 in Fig. 6.

Fig. 9 is a cross-sectional view taken generally along the line 9-9 in Fig. 7.

Fig. 10 is a fragmentary side elevation view of another children's ride-on vehicle with a battery retaining system according to the present invention.

Fig. 11 is a side elevation view of a portion of a children's ride-on vehicle with another battery retaining system according to the present invention that is further adapted to retain a cover portion of the vehicle's body.

Fig. 12 is the fragmentary side elevation view of Fig. 11 with the cover portion released from engagement with the battery retaining system.

Detailed Description and Best Mode of the Invention

A battery retaining system according to the present invention is indicated generally at 10 in Fig. 1. System 10 is configured for use on a vehicle 12 having a battery assembly 14. The battery assembly is adapted to power one or more battery-

powered components of vehicle 12. At least a portion of battery-retaining system 10 is selectively positionable to prevent battery assembly 14 from becoming dislodged during operation of the vehicle.

In the exemplary embodiments described below, vehicle 12 is depicted as a children's ride-on vehicle in the form of a truck. However, it will be appreciated that battery-retaining system 10 may be configured for use on any type of children's ride-on vehicles having one or more battery-powered components. Therefore, the invention is not limited to the particular exemplary embodiments depicted and described herein, but includes all such children's ride-on vehicles. For example, vehicle 12 may take any one of a variety of different reduced-scale forms adapted to simulate real vehicles in reduced scale, including a car, truck, bus, motorcycle, carriage, tractor, construction equipment, etc. Other examples include fantasy vehicles that do not have a full-size, or adult-sized, counterpart.

Children's ride-on vehicle 12 includes a support frame or body 16 sized and configured to carry a child, or pair of children. Body 16 is typically formed of a plurality of molded, rigid plastic parts secured together by screws, nuts, bolts, and similar fasteners. It should be understood that body 16 may be formed of any other suitable materials. Depending on the particular form, body 16 may include one or more seats 18 sized to receive a child.

Vehicle 12 also includes wheels 20 rotatably coupled to body 16, and a drive assembly 22 coupled to drive at least one of the wheels. Any suitable mechanism for drive assembly 22 may be used, as is known in the art. While the drive assembly is illustrated in Fig. 1 as being coupled to the front wheels, it will be appreciated that the drive assembly may be coupled to drive one or both of the rear wheels instead of, or in addition to, the front wheels. Drive assembly 22 may be directly coupled to the wheels, or may be indirectly coupled through one or more linkages, gears, axles, etc. In the exemplary embodiment, drive assembly 22 includes a battery-powered motor assembly 24 having one or more motors adapted to drive the wheels. Motor assembly 24 may also be configured to power other movable components on vehicle 12 depending on the form of the vehicle. For example, the motor assembly may be coupled to raise and lower the blade of a bulldozer or the bed of a dump truck, etc.

In any event, motor assembly 24 is operably connected to battery assembly 14 by suitable connectors such as cables, wires, etc. Vehicle 12 may include one or more

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control elements such as pedal 26 which are connected to battery assembly 14 and/or motor assembly 24. Pedal 26 is operable by the rider to control the motor assembly and, therefore, the operation of the wheels. Typically, vehicle 12 includes control elements to enable the rider to control both the speed and direction of the motor assembly. In addition to pedal 26, any other type of control element suitable for use on a children's ride-on vehicle may be used, including buttons, switches, levers, knobs, etc.

Vehicle 12 includes a steering mechanism such as steering wheel 28 coupled to steer at least one of wheels 20. Alternatively, the steering mechanism may take any other form suitable for operation by a child, including handlebars, etc. In the exemplary embodiment, steering wheel 28 is operable by the rider to control the direction of the front wheels, which are also the wheels driven by drive assembly 22. Alternatively, the steering mechanism may be configured to steer one or more wheels that are not driven by the drive mechanism.

Battery assembly 14 may be any type of battery assembly suitable for use with a children's ride-on vehicle. Typically, battery assembly 14 includes one or more 6-volt and/or 12-volt rechargeable batteries adapted for powering drive assembly 22. Alternatively, other types of batteries may be used which have either the same or different voltages. In any event, the battery assembly is usually mounted in a battery storage region of body 16 such as battery compartment 30. It will be appreciated that the battery compartment may take any of a variety of different shapes, sizes and configurations depending on the form of vehicle 12, as well as the size and shape of battery assembly 14. In the exemplary embodiment, battery compartment 30 is formed as a part of body 16 adjacent the front of the vehicle. Alternatively, the battery compartment may be disposed at any other desired location on body 16.

Typically, battery compartment 30 includes at least one opening 32 through which the battery assembly may be passed into and out of the battery compartment. Exemplary battery compartment 30 has four sidewalls and a bottom wall that are generally sized, shaped and arranged to receive battery assembly 14 and prevent substantial lateral movement of the battery assembly. Opening 32 forms the upper portion of the battery compartment and allows the battery assembly to be lowered into, and raised out of, the battery compartment. While the opening extends entirely between each side wall of the exemplary battery compartment to form the upper

boundary or "wall" of the battery compartment, it will be appreciated that opening 32 may alternatively be smaller in size and may be formed in any one or more walls of the battery compartment.

Battery-retaining system 10 is mounted on vehicle 12 and positioned to
5 selectively maintain battery assembly 14 within battery compartment 30. In the exemplary embodiment depicted in Fig. 1, the battery-retaining system is mounted on body 16 adjacent opening 32. Alternatively, the battery-retaining system may be mounted at any other location suitable for retaining the battery assembly within the battery compartment.

10 Turning attention now to Figs. 2-3, battery-retaining system 10 includes a retaining member 34 selectively movable between a first, or nominal, position and a second, or retracted, position. When retaining member 34 is in its nominal position, such as shown in Fig. 2, it extends over at least a portion of opening 32 to at least partially obstruct the opening. As a result, retaining member 34 blocks removal of the
15 battery assembly when the retaining member is in the nominal position. In the exemplary embodiment depicted in Fig. 2, retaining member 34 overlies a portion of the top of battery assembly 14, thereby preventing the battery assembly from moving upward, out of the battery compartment. Similarly, if vehicle 12 were to be overturned while retaining member 34 was in the nominal position, the retaining
20 member would prevent the battery assembly from moving laterally or falling out of the battery compartment.

When retaining member 34 is in its retracted position, such as shown in Fig. 3, it does not block removal of battery assembly 14 from compartment 30. Thus, battery-retaining system 10 allows passage of the battery through opening 32 when
25 the retaining member is in the retracted position. In the exemplary embodiment, retaining member 34 does not extend over a portion of the opening when the retaining member is in the retracted position. However, it will be appreciated that in some alternative arrangements, retaining member 34 may continue to extend over a portion of the battery compartment when in the retracted position without blocking removal
30 of the battery assembly. An example of such an arrangement is shown in Fig. 5, in which the battery compartment is substantially larger than the battery.

Retaining member 34 may take any form suitable for holding battery assembly 14 in place. In the exemplary embodiment depicted in Fig. 2, the retaining member is

in the form of a generally U-shaped bar or rod. Additionally, the retaining member may be constructed out of any suitable material adapted to hold the battery assembly in place, including metal (i.e., steel, aluminum, etc.), plastic, composite materials, etc. It will be appreciated that while one specific embodiment of retaining member 34 is depicted in Figs. 2-3, the retaining member may take a wide variety of other forms as desired or beneficial for a particular application. As one example, an alternative embodiment of retaining member 34 will be described below

As mentioned above, retaining member 34 is selectively movable between the nominal position and the retracted position by a user. This allows the battery assembly to be quickly and easily installed or removed. Optionally, the retaining member may include a retaining portion 36 and a handle portion 38. Retaining portion 36 is adapted to extend adjacent at least a portion of the battery assembly when the retaining member is in the nominal position. Handle portion 38 is adapted to extend away from the opening so that the handle portion is spaced-apart from the battery assembly. This allows a user to easily grip handle portion 38 and move the retaining member as desired.

Battery-retaining system 10 also includes a biasing member 40 configured to urge retaining member 34 toward the nominal position when the retaining member is in the retracted position. This ensures that the retaining member does not accidentally move to the retracted position when vehicle 12 is in operation. Thus, to install or remove the battery assembly, the user grips handle portion 38 and moves the retaining member to the retracted position against the urging of the biasing member. Preferably, the biasing member is configured to yield in response to a relatively moderate moving force applied by the user. The user then holds the retaining member in the retracted position while installing or removing the battery assembly. Once the user releases the handle portion, the retaining member automatically moves to the nominal position under the urging of the biasing member.

It will be appreciated that biasing member 40 may take any one or more of a variety of different forms adapted to urge retaining member 34 toward the nominal position. In the exemplary embodiment, biasing member 40 is in the form of a compression spring coupled to the retaining member. Alternatively, spring 40 may be a tension spring, torsion spring, plurality of springs, etc. In any event, spring 40 is

coupled to the retaining member so as to be resiliently flexed when the retaining member is moved from the nominal position to the retracted position.

Spring 40 may be coupled to retaining member 34 in any of a variety of different ways. In the exemplary embodiment, battery-retaining system 10 includes a housing 42 mounted on the body adjacent battery compartment 30 and opening 32. Housing 42 is attached to vehicle body 16 by any suitable fasteners such as screws, bolts, clips, etc. Alternatively, the housing may be integrally formed with the body. In any event, one leg 44 of retaining member 34 is slidably received in housing 42. Spring 40 is disposed within the housing and coupled to leg 44 to urge the retaining member toward the nominal position. Housing 42 is formed to define an elongate spring-chamber 46 configured to receive spring 40. Leg 44 of the retaining member passes through apertures at each end of spring-chamber 46. Spring 40 is generally loosely coiled around the leg between a rear wall 48 of the spring-chamber and a washer 50 mounted on leg 44. Washer 50 abuts against a shoulder 52 formed on leg 44.

In the exemplary embodiment, an end cap 54 is mounted on the end of leg 44. End cap 54 is larger than the aperture in rear wall 48, and prevents leg 44 from sliding forward and out of the spring-chamber. End cap 54 is formed as a press-fit connector, such as is known to those of skill in the art. As a result, both retaining member 34 and biasing member 40 are coupled to housing 42 and vehicle body 16 and are not removable from the body without disassembling or breaking the battery retaining system or separating the housing from the body. Thus, in contrast to prior systems that use a detachable retaining member, battery-retaining system 10 is easier to use since it is never removed from the vehicle. Furthermore, system 10 is less susceptible to failure due to lost or damaged parts.

As can be seen in Fig. 3, spring 40 is compressed between washer 50 and back wall 48 when the retaining member is moved to the retracted position. Thus, the spring imparts an urging force on the washer, and thereby the retaining member, as a result of the potential energy stored in the spring. Typically, the spring is somewhat compressed even when the retaining member is in the nominal position so that at least some urging force is imparted to the retaining member to hold it in the nominal position. Optionally, a selectively removable cover 58 may be provided to enclose

the spring-chamber and spring to prevent debris from entering the spring-chamber and to protect a child from being accidentally pinched by the spring

In the exemplary embodiment depicted in Figs 2 and 3, the other leg 56 of U-shaped retaining member 34 is slidably received in a molded channel 60 defined by housing 42. Although leg 56 is depicted as being shorter than leg 44, it will be appreciated that the length of leg 56 may alternatively be equal to, or greater than, the length of leg 44. It can be seen that spring-chamber 46 and channel 60 form substantially parallel tracks that guide the movement of legs 44 and 56, respectively. As a result, the retaining member is constrained to move or slide in at least substantially a single direction aligned with spring-chamber 46 and channel 60, toward and away from opening 32. Alternatively, the spring-chamber and channel may be configured to guide the movement of the retaining member in other ways.

Turning attention now to Fig. 4, it can be seen that retaining member 34 is disposed to slide in a direction generally parallel with the top side 62 of battery assembly 14. It will be appreciated that retaining system 10 may be configured, relative to the height of battery assembly 14, so that retaining portion 36 rests in contact with top side 62 when the retaining member is in the nominal position. Alternatively, the retaining portion may extend above top side 62 without contacting the battery assembly. This latter configuration is shown in Fig. 4 by the battery assembly, which has a top side indicated in dash lines.

Regardless of whether the retaining portion contacts the top of battery assembly 14, it will be appreciated that the urging force imparted to the retaining member by spring 40 is along a direction parallel with top side 62. Thus, in contrast to prior art systems, retaining member 34 is configured not to transfer the urging force of the spring onto the battery assembly. This relieves the battery assembly of a source of long-term pressure that may damage the battery assembly. Alternatively, the battery retaining system may be configured to transfer some or all of the urging force to the battery.

It will be appreciated that battery retaining system 10 may be arranged in a variety of different ways depending on the particular configuration of vehicle 12, battery compartment 30, and battery assembly 14. For example, Fig. 5 illustrates an alternative arrangement in which retaining member 34 is oriented so that the end regions of the U-shaped member extend spaced apart from the battery assembly,

while the central region extends downward toward the top of the battery assembly. In contrast to the embodiment depicted in Figs. 2-4, therefore, the central region of the retaining member forms retaining portion 36, while the end regions form handle portion 38. Nevertheless, retaining member 34 is selectively slidable away from opening 32 to allow passage of battery assembly 14 into, or out of, battery compartment 30. A biasing member such as described above urges the retaining member from a retracted position away from opening 32 to a nominal position obstructing the opening.

As also shown in Fig. 5, exemplary battery assembly 14 includes a socket 39 adapted to engage a plug and cable assembly 41. Assembly 41 is coupled to motor assembly 24 (not shown) to carry electrical power from the battery assembly to the motor assembly. Alternatively, vehicle 12 may include other mechanisms for conducting electrical power from the battery assembly to the motor assembly. The arrangement illustrated in Fig. 5 also includes a battery compartment 30 that is substantially larger than battery assembly 14. Thus, the sidewalls of the battery compartment may not sufficiently support the battery assembly against lateral movement within the compartment. Instead, the exemplary battery compartment of Fig. 5 includes one or more mounts 43 positioned to extend adjacent one or more sides of the battery assembly and prevent lateral movement of the battery assembly within the battery compartment.

Turning attention now to Figs. 6-9, an alternative embodiment of battery retaining system 10 is shown. Retaining member 34 is in the form of a generally rectangular bar slidably received in housing 42. Alternatively, retaining member 34 may be formed to have any other suitable shape as desired. In the depicted embodiment, retaining member 34 is formed as a molded plastic structure, but may alternatively be formed in other ways and/or from other materials. In any event, the retaining member includes a retaining portion 36 which extends generally parallel to the top side of battery assembly 14.

In its nominal position shown in Fig. 6, retaining portion 36 extends toward battery compartment 30 to at least partially obstruct opening 32 and block installation or removal of the battery assembly. The retaining member is depicted as overlying a generally central portion of the battery assembly to better obstruct the opening. However, it will be appreciated that the retaining member may alternatively be

configured to overlie other portions of the battery assembly. The relatively wide and flat shape of the retaining portion also provides stable support to the battery assembly in the event the vehicle is overturned. Handle portion 38 is configured to be gripped by a user to move the retaining member to a retracted position within the housing.

5 The handle portion may be formed in a variety of alternative shapes suitable for gripping. An example of an alternative shape is indicated in dash lines in Fig. 7

Retaining member 34 is received through an aperture in housing 42 and extends generally parallel to an upper inner surface 64 of the housing. The rear portion of the retaining member includes a pair of elongate guide slots 66 adapted to receive guide members 68. The guide members extend downward from upper inner surface 64 and into guide slots 66. Members 68 are slidable within slots 66 to substantially constrain the movement of retaining member 34 to a single direction. Each guide slot includes opposing end walls 70 which limit the length of travel of the retaining member, thereby preventing the retaining member from sliding out of housing 42.

Alternative retaining member 34 is also formed to define a spring chamber 72 between guide slots 66. Spring chamber 72 is adapted to receive a spring 40 or other suitable biasing member. The spring is enclosed within chamber 72 by upper inner surface 64. A bulkhead 74 extends downward from the upper inner surface into spring chamber 72. Spring 40 is positioned between bulkhead 74 and the front wall 76 of the spring chamber. When the retaining member is moved toward its retracted position as shown in Fig. 7, front wall 76 moves toward bulkhead 74, thereby compressing spring 40. As a result, the spring urges the retaining member back toward its nominal position.

25 Retaining member 34 is held adjacent upper inner surface 64 by one or more clips 78 which extend downward from the upper inner surface along the sides of the retaining member. Each clip includes an inwardly projecting lip that slidably supports the underside of the retaining member. The retaining member is also held adjacent the upper inner surface of housing 42 by a base member 80. The housing is mounted to body 16 above base member 80, which extends upward from the body to a position beneath retaining member 34 and prevents the retaining member from moving away from upper inner surface 64. Alternatively, the retaining member may be held adjacent the upper inner surface of the housing by other mechanisms.

In the alternative embodiment depicted in Figs 6-9, housing 42 includes a plurality of mounting sleeves 82. The mounting sleeves are adapted to fit over posts 84. Each sleeve 82 is adapted to receive a screw or similar fastener (not shown), which extends into and engages threaded bores (not shown) in posts 84. Thus, retaining member 34 and biasing member 40 cannot be removed from the body without disassembling or breaking the retaining system. Alternatively, the housing may be mounted on body 16 in other ways known to those of skill in the art.

As described above, battery-retaining system 10 provides a reliable system for preventing a vehicle battery assembly from becoming dislodged during operation of the vehicle. Furthermore, system 10 is configured to allow the battery assembly to be installed or removed easily and without the use of tools. While various alternative embodiments and arrangements of battery retaining system 10 have been shown and described above, it will be appreciated by those of skill in the art that numerous other embodiments, arrangements, and modifications are possible and, therefore, within the scope of the invention. For example, it should be understood that battery retaining systems according to the present invention may be configured to engage any of the sides of the battery assembly. To provide an illustrative example of this point, Fig. 10 illustrates a battery assembly 40 that is adapted to be inserted side-first into the battery-compartment 30 of the body 16 of a ride-on vehicle. In such a configuration, retaining portion 36 extends at least partially across opening 32 to engage, or be in a position to engage, a sidewall 90 of the battery assembly.

Battery retaining systems 10 according to the present invention may also be used to retain elements of the vehicle other than battery assembly 14. An example of such a configuration is shown in Fig. 11, in which system 10 is adapted to retain a cover portion 92 of the vehicle's body 16 over opening 32 of battery compartment 30. Portion 92 may also be described as a cover, or door, for compartment 30. It is often desirable to have such a cover or door so that the battery assembly (associated plug and cable assembly 41) is shielded from contact by external elements, including the rider, when the cover is in place. Cover 92 may at least partially, if not substantially or completely, cover (or enclose) the opening of the battery compartment. It is also within the scope of the invention that the cover may form another portion of the vehicle's body, such as at least a portion of the vehicle's seat.

By way of background, conventional covers are removably attached to the body via mechanical fasteners, such as screws, that must be released to permit access to the battery compartment, and then reinstalled to resecure the cover in its closed position. These fasteners are typically separable from the cover and as such are often removed from the cover because of the time and/or tools required to remove and resecure the fasteners. As a result, conventional covers are often left unsecured to the vehicle's body or removed from the vehicle.

The battery retaining system shown in Fig 11 also illustrates that at least a portion of the system may be housed within or beneath the body 16 of the vehicle, with handle portion 38 being accessible from external the body so that a user may selectively configure the system between its nominal and retracted positions. For example, handle portion 38 may be accessible through a slot or other opening in the body, and/or may extend at least partially through the opening.

In the embodiment shown in Fig 11, the cover includes an engagement structure 94, such as catch 96, which is adapted to be selectively engaged by retaining portion 36 to selectively retain the cover in its closed position. When the battery retaining system is urged to its retracted position, such as shown in Fig 12, the retaining portion not only is sufficiently withdrawn from opening 32 so that the battery assembly may be removed from the battery compartment, but also releases the engagement structure so that the cover portion may be moved to an open position that permits access to battery assembly 14. In Fig 11, the cover portion is shown including mounts 98, such as hinges 100, which enable the cover to pivot relative to the body. It is also within the scope of the invention that cover portion 92 may be formed without mounts 98, in which case, the cover portion would be configured to be completely removed from the body upon release of engagement structure 94 by retaining portion 36.

In the illustrative embodiment shown in Fig. 12, it can be seen that battery compartment 30 includes a passage 97 into which engagement structure 94 may extend when the cover portion is in its closed position. It is within the scope of the invention that passage 97 may be part of the battery compartment, as shown in Fig. 12, or that the passage may be separated from the battery compartment by another portion of the body. In Fig 12, it can be seen that catch 96 includes an opening, or passage, 102 into which retaining portion 36 may at least partially extend.

to permit the unintentional removal of cover portion 92 from its closed position. It is within the scope of the invention that engagement structure 94 may have any suitable configuration adapted to be selectively engaged by retaining portion 36 to selectively retain the cover portion in its closed position. Accordingly, it should be understood
5 that the projecting catch shown in Figs 11 and 12 is but an illustrative example of a suitable engagement structure

It is believed that the disclosure set forth above encompasses multiple distinct inventions with independent utility. While each of these inventions has been disclosed in its preferred form, the specific embodiments thereof as disclosed and
10 illustrated herein are not to be considered in a limiting sense as numerous variations are possible. The subject matter of the inventions includes all novel and non-obvious combinations and subcombinations of the various elements, features, functions and/or properties disclosed herein. Where the claims recite "a" or "a first" element or the equivalent thereof, such claims should be understood to include incorporation of one
15 or more such elements, neither requiring nor excluding two or more such elements.

It is believed that the following claims particularly point out certain combinations and subcombinations that are directed to one of the disclosed inventions and are novel and non-obvious. Inventions embodied in other combinations and subcombinations of features, functions, elements and/or properties may be claimed
20 through amendment of the present claims or presentation of new claims in this or a related application. Such amended or new claims, whether they are directed to a different invention or directed to the same invention, whether different, broader, narrower or equal in scope to the original claims, are also regarded as included within the subject matter of the inventions of the present disclosure.

WE CLAIM

1 A children's ride-on vehicle, comprising
a vehicle body adapted to carry a child,
a plurality of wheels coupled to the body;
a drive assembly coupled to drive at least one of the plurality of
wheels, the drive assembly including a motor assembly having at least one battery-
powered motor;
a battery assembly disposed on the body and operably connected to the
motor assembly; and
a battery retainer assembly mounted on the body, wherein the battery
retainer assembly comprises
a retaining member selectively movable between a first position
in which the retaining member obstructs removal of the battery assembly from the
body, and a second position in which the retaining member does not obstruct removal
of the battery assembly from the body, and
a biasing member coupled to the retaining member and
configured to urge the retaining member from the second position toward the first
position.

2 The vehicle of claim 1, wherein the body includes a battery
compartment adapted to hold the battery assembly, and wherein the battery
compartment has an opening, and wherein the retaining member at least partially
obstructs the opening when in the first position.

3 The vehicle of claim 2, wherein the opening is adapted to allow
the battery assembly to be lowered into and raised out of the battery compartment,
and wherein the retaining member at least partially overlies a top portion of the
battery assembly when the battery assembly is in the battery compartment and the
retaining member is in the first position.

4 The vehicle of claim 2, wherein the opening is adapted to allow the battery assembly to be inserted into and removed from the battery compartment, and wherein the retaining member at least partially overlies a side portion of the battery assembly when the battery assembly is in the battery compartment and the retaining member is in the first position

5 The vehicle of claim 2, wherein the biasing member is configured to impart an urging force on the retaining member to urge the retaining member toward the first position, and wherein the retaining member is configured not to transfer the urging force to the battery assembly

6 The vehicle of claim 5, wherein the retaining member is configured not to contact the battery assembly when the battery assembly is in the battery compartment and the retaining member is in the first position.

7 The vehicle of claim 2, wherein the battery compartment is sized to at least substantially correspond to the shape of the battery assembly

8 The vehicle of claim 1, wherein the retaining member is slidably coupled to the body for movement substantially constrained to a single direction relative to the body

9 The vehicle of claim 1, wherein the retaining member is unremovably coupled to the body

10 The vehicle of claim 9, wherein the biasing member is unremovably coupled to the body

11 The vehicle of claim 1, wherein the biasing member includes a spring

12 The vehicle of claim 1, wherein the retaining member includes a retaining portion adapted to extend adjacent at least a portion of the battery assembly when the retaining member is in the first position, and a handle portion spaced-apart from the battery assembly and adapted to be gripped by a user to move the retaining member from the first position to the second position against the urging of the biasing member

13 The vehicle of claim 12, wherein the body includes a slot through which the handle portion is accessible by a user to move the retaining member from the first position to the second position against the urging of the biasing member

14 The vehicle of claim 13, wherein the handle portion extends at least partially through the slot.

15 The vehicle of claim 2, further including a battery cover adapted to at least partially obstruct the opening, wherein in the first position, the retaining member is positioned to retain the battery cover in a first cover position, in which the battery cover is positioned to obstruct removal of the battery assembly from the battery compartment, and further wherein in the second position the battery cover may be sufficiently removed from the opening to a second cover position in which the battery assembly may be removed from the battery compartment through the opening.

16 The vehicle of claim 15, wherein the battery cover is pivotally coupled to the body

17 The vehicle of claim 15, wherein the biasing member is configured to impart an urging force on the retaining member to urge the retaining member toward the first position, and wherein the retaining member is configured not to transfer the urging force to the battery cover

18 The vehicle of claim 15, wherein the battery cover includes a catch, and further wherein the retaining member is adapted to engage the catch when the battery compartment is in the first cover position and the retaining member is in the first position

19 The vehicle of claim 18, wherein the catch defines a passage into which the retaining member at least partially extends when the cover is in the first cover position and the retaining member is in the first position

20 The vehicle of claim 15, wherein the battery cover is adapted to completely cover the opening when in the first cover position

21 The vehicle of claim 15, wherein the retaining member includes a retaining portion adapted to extend adjacent at least a portion of the battery assembly when the retaining member is in the first position, and a handle portion spaced-apart from the battery assembly and adapted to be gripped by a rider to move the retaining member from the first position to the second position against the urging of the biasing member

22 The vehicle of claim 21, wherein the body includes a slot through which the handle portion is accessible from external the vehicle's body

23 The vehicle of claim 22, wherein the handle portion at least partially extends through the slot

24 The vehicle of claim 15, wherein the retaining member is coupled to the body and constrained to slide along a single plane between the first and the second positions.

25 The vehicle of claim 24, wherein the plane extends generally parallel to a side of the battery assembly when the battery assembly is in the battery compartment.

26 The vehicle of claim 25, wherein the plane further extends generally parallel to the battery cover when the battery cover is in the first cover position

27 The vehicle of claim 15, wherein the retaining member is configured not to directly engage the battery assembly when the battery assembly is positioned within the battery compartment and the retaining member is in the first position

28 The vehicle of claim 15, wherein the battery retainer assembly includes a housing mounted on the body and adapted to slidably receive at least a portion of the retaining member, and where the biasing member includes a spring disposed within the housing.

29 The vehicle of claim 18, wherein the battery compartment includes a passage into which the catch at least partially extends when the battery cover is in the first cover position.

30 A children's ride-on vehicle having one or more battery-powered components, the vehicle comprising

a vehicle body,

a battery assembly having at least one battery;

a battery compartment disposed on the vehicle body and adapted to hold the battery assembly, wherein the battery compartment includes at least one opening adapted for passage of the battery assembly into or out of the battery compartment, and

a battery retainer assembly disposed adjacent the battery compartment, the battery retainer assembly including a retaining member connected to a biasing member,

wherein the retaining member is selectively movable from a nominal position which obstructs the opening to prevent passage of the battery assembly, to a retracted position which allows passage of the battery assembly through the opening; and

wherein the biasing member is configured to urge the retaining member toward the nominal position when the retaining member is in the retracted position.

31 The vehicle of claim 30, wherein the retaining member is unremovably connected to the body

32 The vehicle of claim 30, wherein the retaining member is coupled to the body and constrained to slide along a single direction between the nominal position and the retracted position.

33 The vehicle of claim 32, wherein the retaining member is constrained to slide along a single direction generally parallel with a top side of the battery assembly when the battery assembly is in the battery compartment

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34 The vehicle of claim 30, wherein the opening forms an upper portion of the battery compartment, and wherein the retaining member at least partially overlies a top portion of the battery assembly when the battery assembly is in the battery compartment and the retaining member is in the nominal position

35 The vehicle of claim 34, wherein the retaining member is configured not to impart downward pressure on the battery assembly when the battery assembly is held within the battery compartment and the retaining member is in the nominal position.

36 The vehicle of claim 30, wherein the retaining member includes a retaining portion adapted to extend adjacent at least a portion of the battery assembly when the retaining member is in the nominal position, and a handle portion spaced-apart from the battery assembly and adapted to be gripped by a rider to move the retaining member from the nominal position to the retracted position against the urging of the biasing member

37 The vehicle of claim 30, wherein the battery retainer assembly includes a housing mounted on the body and adapted to slidably receive at least a portion of the retaining member, and wherein the biasing member includes a spring disposed within the housing.

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38 A children's ride-in vehicle, comprising
a battery assembly having one or more batteries,
a vehicle body adapted to carry a child, the body including a battery compartment adapted to hold the battery assembly and having at least one opening through which the battery assembly may be passed,
one or more wheels coupled to the body;
a drive assembly coupled to drive at least one of the wheels, the drive assembly including a motor assembly having one or more battery-powered motors operably connected to the battery assembly,
a retaining member coupled to the body and positioned to extend over at least a portion of the opening to obstruct passage of the battery assembly; and
a biasing member coupled to the retaining member;
wherein the retaining member is selectively slidable away from the opening against the urging of the biasing member

39 The vehicle of claim 38, further comprising a housing mounted on the body, and wherein at least a portion of the retaining member is received in the housing and slidable within the housing generally along a single direction.

40 The vehicle of claim 39, wherein the biasing member is disposed in the housing and configured to urge the retaining member toward the opening

41 The vehicle of claim 40, wherein the housing includes a cover adapted to enclose the biasing member

42 The vehicle of claim 39, wherein the retaining member includes a handle portion extending away from the opening and adapted to be gripped by a rider to slide the retaining member away from the opening

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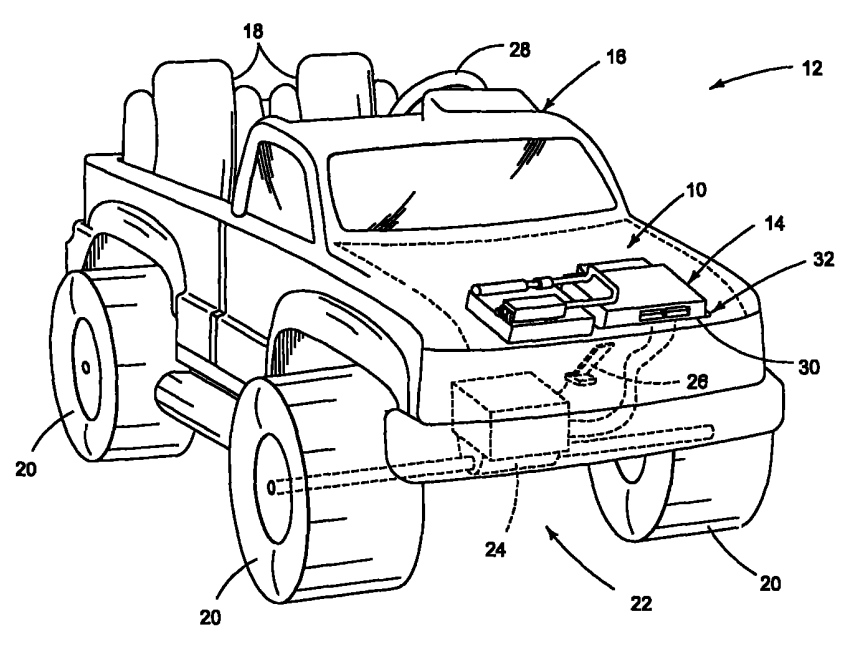
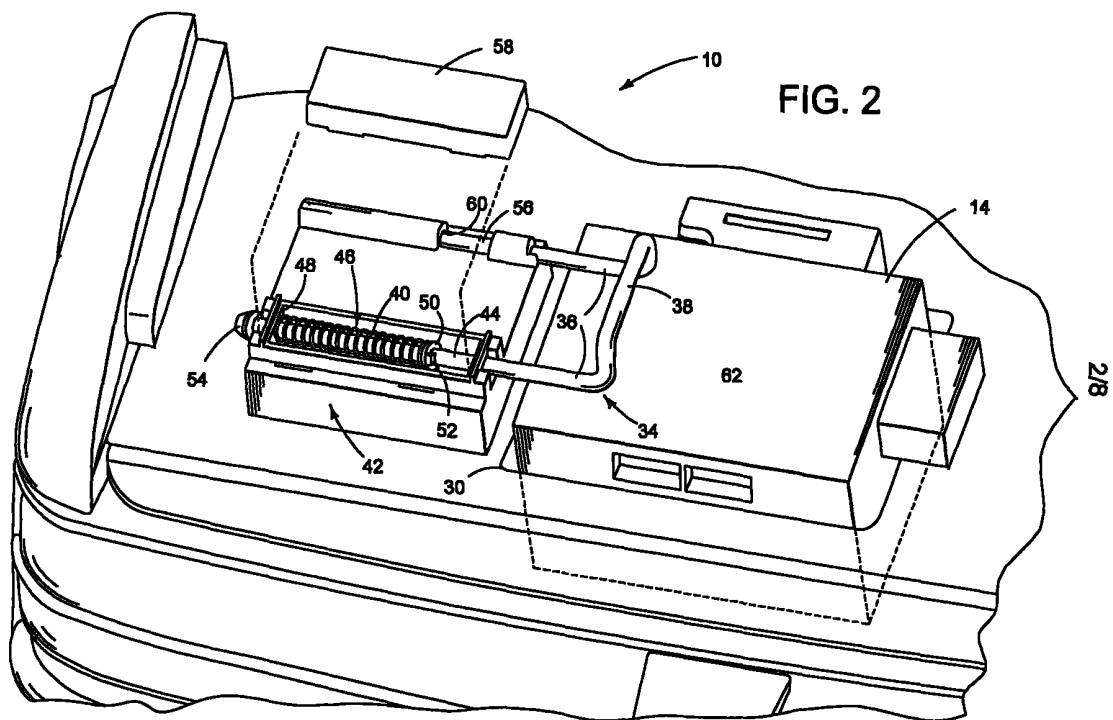


FIG. 1

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FIG. 2



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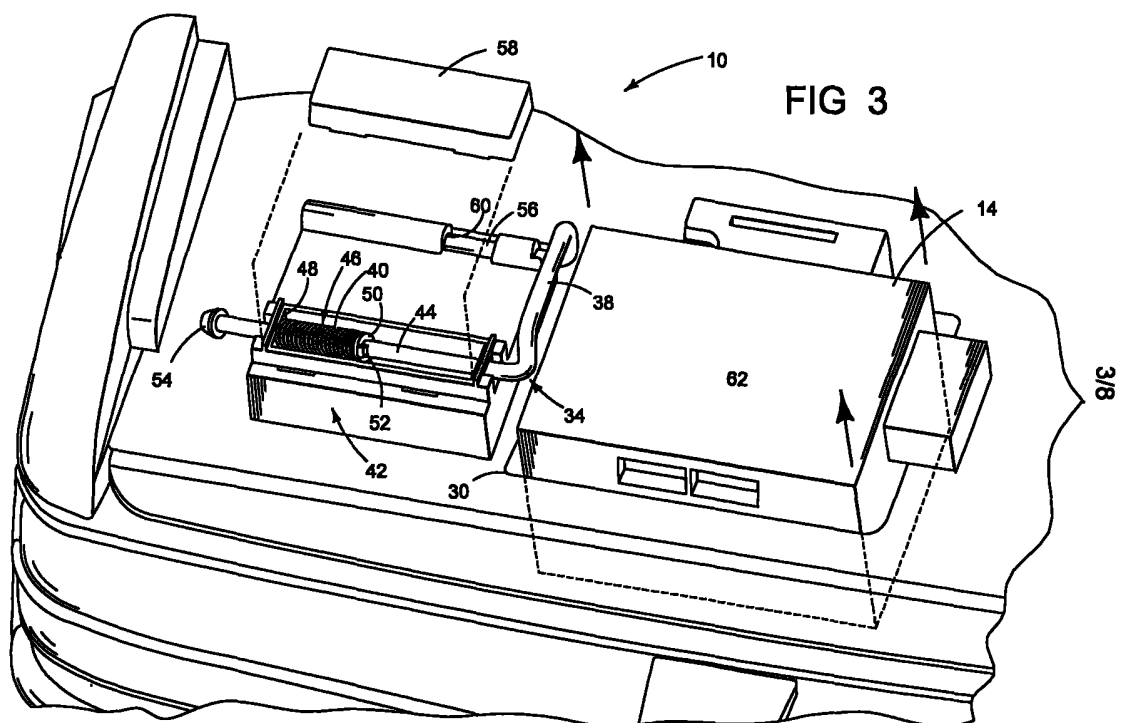


FIG 3

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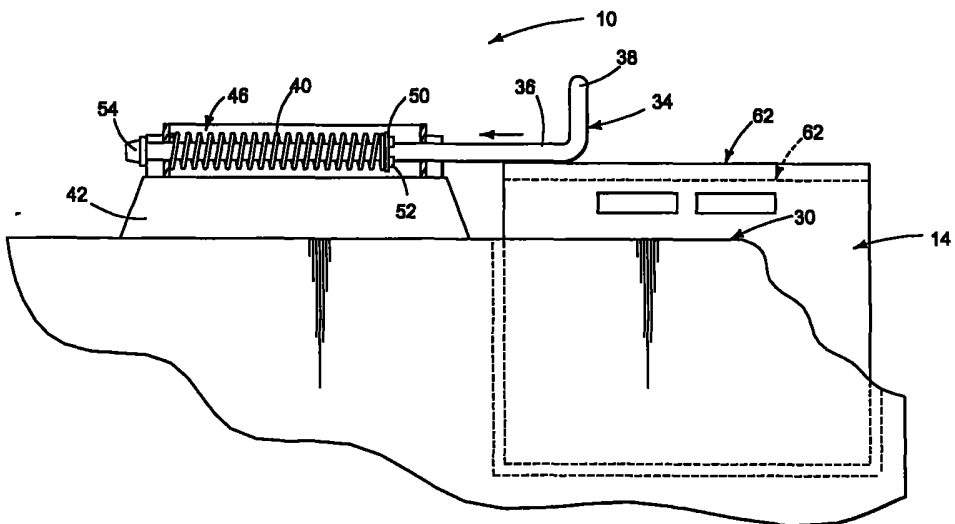
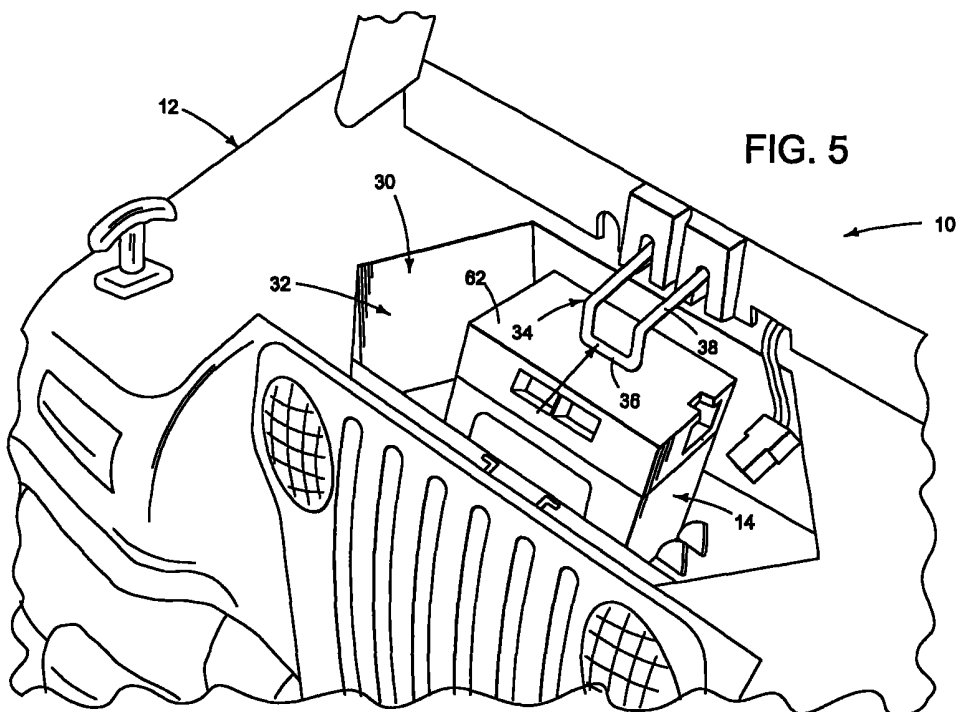


FIG. 4

FIG. 5



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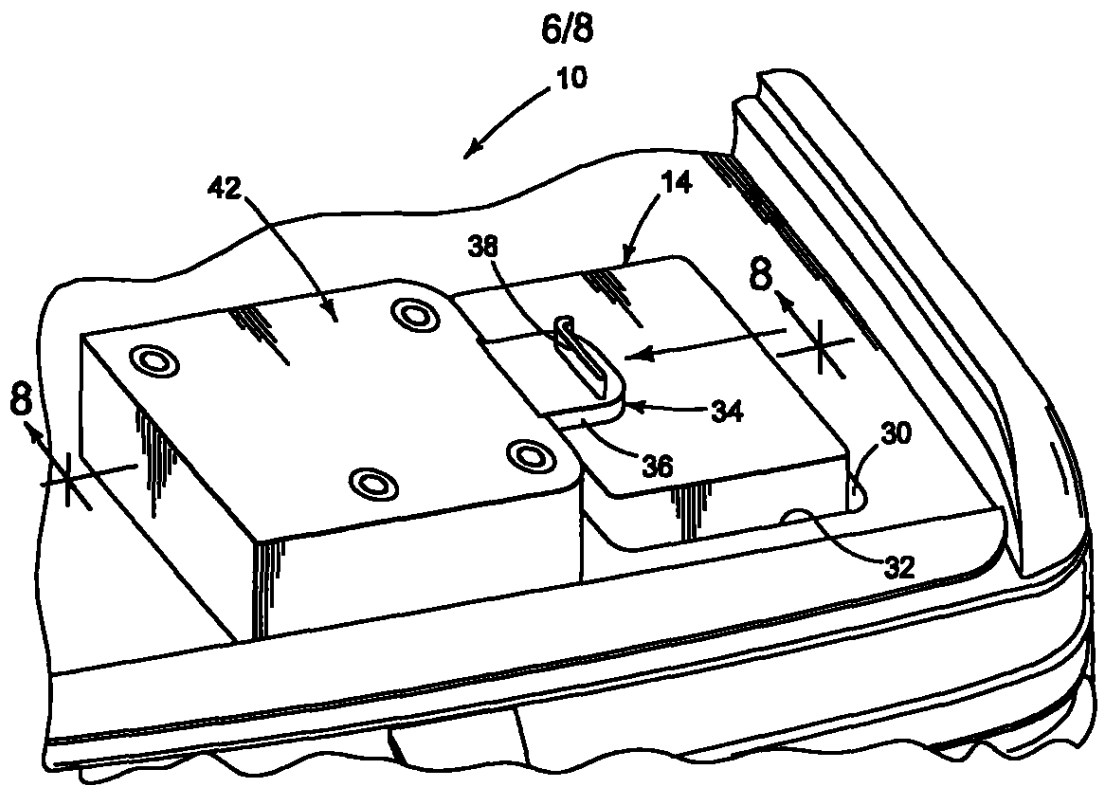


FIG. 6

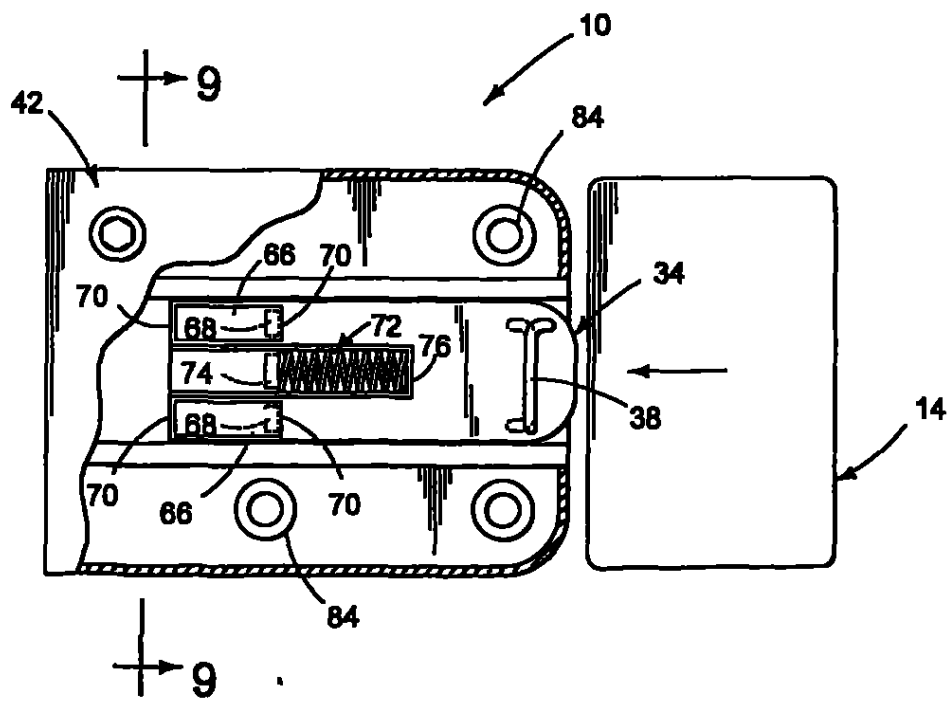


FIG. 7

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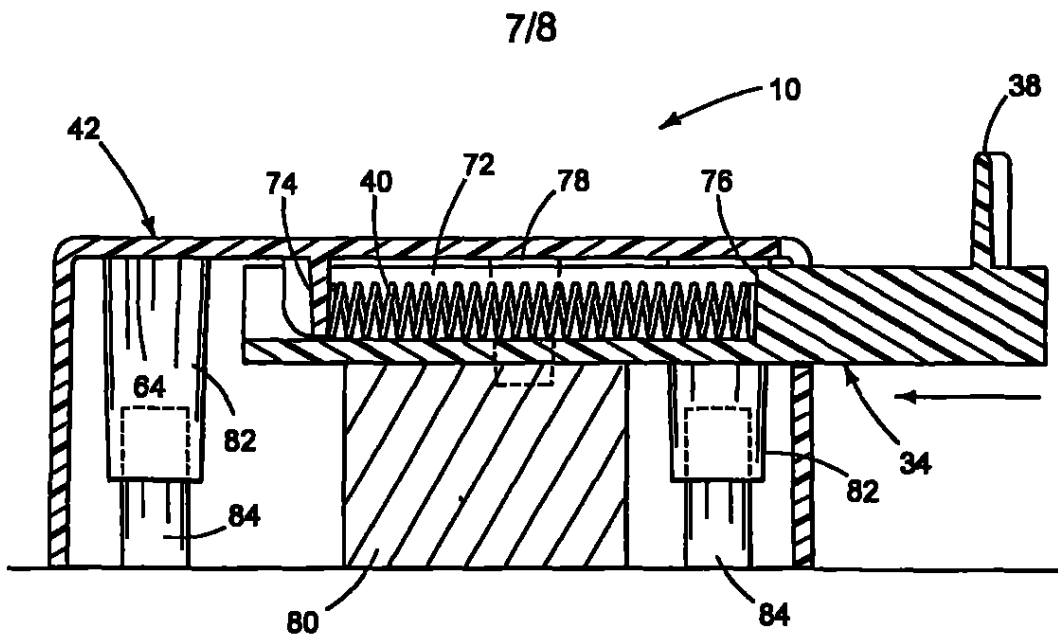


FIG. 8

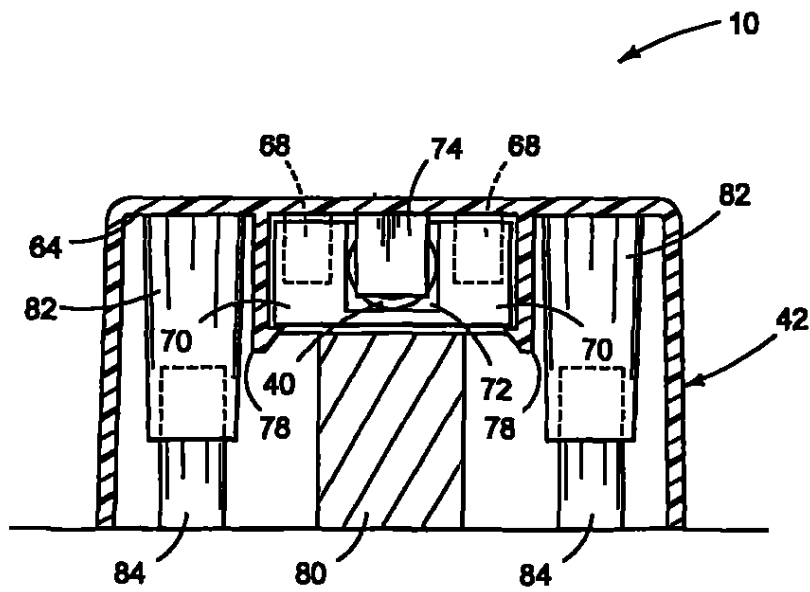


FIG. 9

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FIG. 10

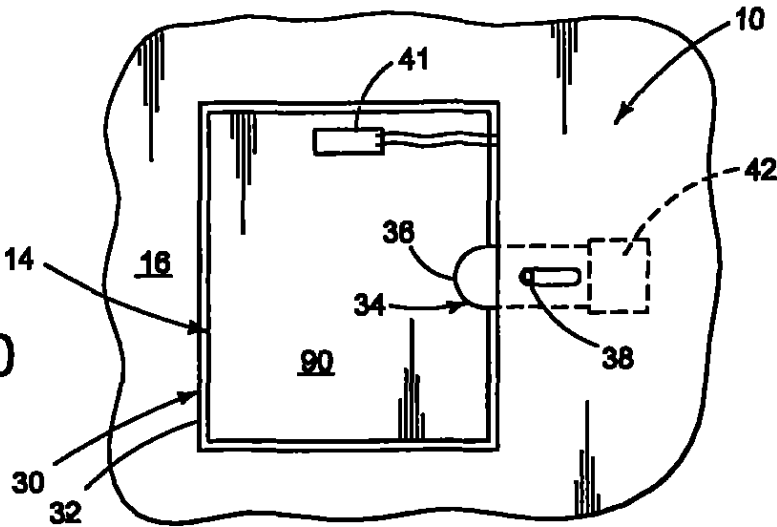


FIG. 11

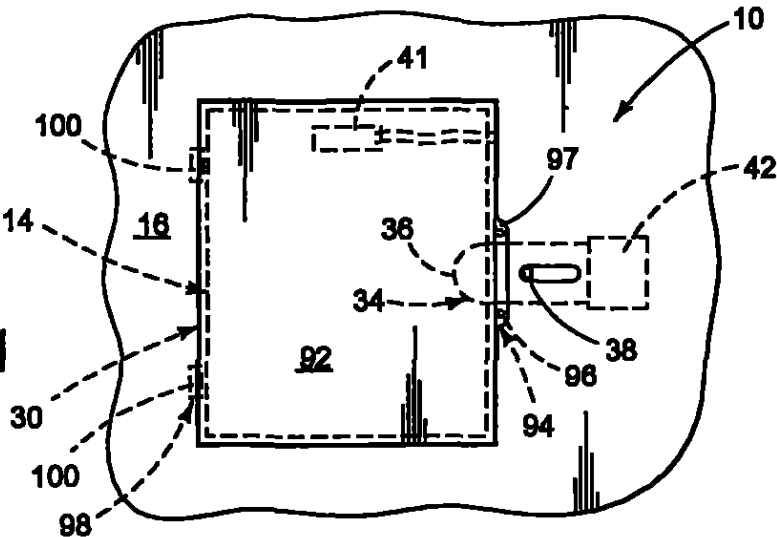
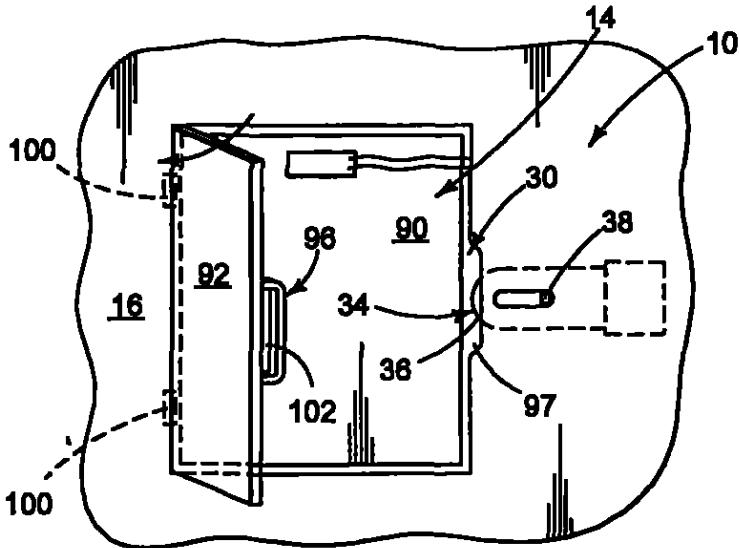


FIG. 12



PATENT COOPERATION TREATY

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From the INTERNATIONAL SEARCHING AUTHORITY

To DAVID S D'ASCENZO KOLSICH HARTWELL, DICKINSON MCCORMACK & HEUSLER 590 S.W. YAMHILL STREET SUITE 800 PORTLAND OREGON 97104

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT OR THE DECLARATION

(PCT Rule 44.1)

Date of Mailing <i>(day/month/year)</i>	24 JUN 2002
Applicant's or agent's file reference MPW sDdB	FOR FURTHER ACTION See paragraphs 1 and 4 below
International application No. PCT/US01/40058	International filing date <i>(day/month/year)</i> 01 NOVEMBER 2001
Applicant Mattell, Inc.	

- 1 ☒ The applicant is hereby notified that the international search report has been established and is transmitted herewith
- Filing of amendments and statement under Article 19-**
 The applicant is entitled if he so wishes to amend the claims of the international application (see Rule 46)
- When?** The time limit for filing such amendments is normally two months from the date of transmittal of the international search report
- Where?** Directly to the International Bureau of WIPO 34 chemin des Colombettes
 1211 Geneva 20, Switzerland Facsimile No (41-22) 740 14 35
- For more detailed instructions, see the notes on the accompanying sheet
- 2 ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith
- 3 ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2 the applicant is notified that
- ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices
☐ no decision has been made yet on the protest the applicant will be notified as soon as a decision is made
4. **Reminders**
- Shortly after 18 months from the priority date the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication a notice of withdrawal of the international application or of the priority claim must reach the International Bureau as provided in rules 90bis 1 and 90bis 3 respectively before the completion of the technical preparations for international publication
- Within 19 months from the priority date but only in respect of some designated Offices a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later) otherwise the applicant must within 20 months from the priority date perform the prescribed acts for entry into the national phase before those designated Offices
- In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months
- See the Annex to Form PCT/IB/301 and for details about the applicable time limits Office by Office see the *PCT Applicant's Guide* Volume II National Chapters and the WIPO Internet site

Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, DC 20531 Facsimile No (703) 305-3450	Authorized officer BRIAN JOHNSON Telephone No (703) 308-0885
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Form PCT/ISA/220 (April 2002)*

(See notes on accompanying sheet)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference MPW 3D8B	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as where applicable, item 5 below
International application No PCT/US01/48058	International filing date (day/month/year) 01 NOVEMBER 2001	(Earliest) Priority Date (day/month/year) 08 NOVEMBER 2000
Applicant Mattell Inc.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau

This international search report consists of a total of 3 sheets

☒ It is also accompanied by a copy of each prior art document cited in this report.

1 Basis of the report

a With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b))

b With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing

☐ contained in the international application in written form

☐ filed together with the international application in computer readable form

☐ furnished subsequently to this Authority in written form

☐ furnished subsequently to this Authority in computer readable form

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2 ☐ Certain claims were found unsearchable (See Box I)

3 ☐ Unity of invention is lacking (See Box II)

4. With regard to the title,

☒ the text is approved as submitted by the applicant

☐ the text has been established by this Authority to read as follows

5 With regard to the abstract,

☐ the text is approved as submitted by the applicant.

☒ the text has been established according to Rule 38 2(b) by this Authority as it appears in Box III. The applicant may within one month from the date of mailing of this international search report submit comments to this Authority

6 The figure of the drawings to be published with the abstract is Figure No 1

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention

☐ None of the figures

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Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

The technical features mentioned in the abstract do not include a reference sign between parentheses (PCT Rule 8 1(d))

NEW ABSTRACT

A battery restraining system (Figure 1) for a children's ride-on vehicle (12). The system includes a retaining member (34) that is selectively movable between a first or nominal position in which the retaining member blocks removal of a battery assembly (14) from the body of the vehicle, and a second position in which the retaining member does not block removal of the battery assembly. The battery retaining system also includes a biasing member (40) coupled to the retaining member and configured to urge the retaining member from the second position toward the first position. In some embodiments, the battery retaining system is further adapted to retain portions of the vehicle other than the battery assembly.

INTERNATIONAL SEARCH REPORT

International application No
PCT/US01/48058

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A CLASSIFICATION OF SUBJECT MATTER

IPC(7) B00R 10/04

US CL 180/88.5, 180/85.1 448/500

According to International Patent Classification (IPC) or to both national classification and IPC

B FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. 180/88.5 05.1 05.0 448/86, 87 88, 89 100; 448/500, 503 505 510; 448/102 175 105/51 448/439

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and where practicable search terms used)

C DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,632,201 (Kay), 30 December 1986 (30 12 86), all	1-42
AP	US 6,179,331 (JONES, JR et al) 30 January 2001 (30 01 01), all	1-42
AP	US 6,186,256 (DIGNITTI) 13 February, 2001 (13 02 01), all	1-42



Further documents are listed in the continuation of Box C.



See patent family annex

Special categories of cited documents		
A document defining the general state of the art which is not considered to be of particular relevance	T	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
E earlier document published on or after the international filing date	X	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
L document which may throw doubt on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	Y	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
O document referring to an oral disclosure, use, exhibition or other means		
P document published prior to the international filing date but later than the priority date claimed	A*	document member of the same patent family

Date of the actual completion of the international search

25 APRIL 2002

Date of mailing of the international search report

24 JUN 2002

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**SISTEMA DE ASEGURAMIENTO
DE BATERIA PARA VEHICULOS DE PASEO PARA NIÑOS**

Campo de la invención

La presente invención es dirigida a vehículos de paseo para niños y mas particularmente al sistema de aseguramiento de batería para los vehículos de paseo para niños

Antecedentes

Los vehículos de paseo para niños motorizados con batería son juguetes populares para niños. Las baterías para estos vehículos son usualmente montadas en un compartimiento del vehículo. Típicamente, el compartimiento es fácilmente accesible de tal manera que la batería puede ser removida, tal como para reemplazarla o recargarla.

Para prevenir un accidente o una lesión, la batería debe ser asegurada en el compartimiento. Si una batería se voltea o se desplaza en el compartimiento, la batería y/o el vehículo puede ser dañado. Por ejemplo, el

vehículo típicamente incluye cableado eléctrico que se conecta a la batería a uno o más componentes de potencia del vehículo. Una caída de la batería puede dañar o zafar el cableado, causando un corte eléctrico o un peligro similar. Además, una batería que no está asegurada en el compartimiento de la batería puede salirse del compartimiento y posiblemente lesionar al conductor.

Un método para asegurar la batería es construir un compartimiento de batería que es aproximadamente del mismo tamaño y forma de la batería. Sin embargo, la batería puede ser removida no intencionalmente del compartimiento, cuando por ejemplo el vehículo se voltee. Además, las dimensiones del compartimiento pueden limitar diseños futuros de la batería.

Otro método de asegurar la batería es instalar un dispositivo que asegure la batería en el vehículo para mantener la batería en su lugar por medio de una abrazadera. Sin embargo, estos dispositivos de aseguramiento han sido muy difíciles de usar, requieren herramientas para sujetar y remover, y/o también tienen tendencia de soltarse de la batería permitiendo que esta se mueva. También, por lo que es removible, el

dispositivo puede perderse, o simplemente no volverse a instalar debido al tiempo y esfuerzo requerido para reinstalar este dispositivo

Resumen

La presente invención provee un sistema de aseguramiento de batería para los vehículos de paseo de los niños. El sistema de aseguramiento de batería incluye un elemento de retención que es movable selectivamente entre un primer, o nominal, posición en la cual el elemento de retención bloquea la remoción del conjunto de la batería del cuerpo del vehículo, y una segunda posición en la cual el elemento de retención no bloquea el conjunto de la batería para removerla. El sistema de aseguramiento de la batería también incluye un elemento predispuesto acoplado al elemento de retención y configurado para devolver el elemento de aseguramiento de la segunda posición hacia la primera posición. En algunos diseños, el sistema de aseguramiento de batería es adaptado para asegurar parte del vehículo en vez del conjunto de la batería.

Breve descripción de los dibujos

La figura 1 es un esquema, vista frontal isométrica del vehículo de paseo para niños teniendo el sistema de aseguramiento de batería de acuerdo con la presente invención

La figura 2 es una vista parcial magnificada, del vehículo de la figura 1 mostrando detalles del sistema de aseguramiento de batería

La figura 3 es similar a la figura 2 pero muestra el elemento de aseguramiento del sistema de aseguramiento de batería en la posición segunda o retraída

La figura 4 es una vista lateral de elevación parcial del sistema de aseguramiento de la batería de la figura 2

La figura 5 es una vista isométrica parcial, de un vehículo diferente teniendo un arreglo alternativo del sistema de aseguramiento de la batería de la figura 1

La figura 6 es una vista isométrica de otro diseño del sistema de aseguramiento de la batería de acuerdo con la presente invención

La figura 7 es una vista en planta superior parcial del sistema de aseguramiento de la batería de la figura 6

La figura 8 es una vista en sección tomada generalmente a través de la línea 8-8 de la figura 6

La figura 9 es una vista en sección tomada generalmente a lo largo de la línea 9-9 de la figura 7

La figura 10 es una vista lateral de elevación parcial de otro vehículo de paseo para niños con el sistema de aseguramiento de batería de acuerdo con la presente invención

La figura 11 es una vista lateral de elevación de una porción del vehículo de paseo para niños con otro sistema de aseguramiento de batería de acuerdo con la presente invención que es además adaptada para asegurar parte de la tapa del cuerpo del vehículo

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La figura 12 es una vista lateral de elevación parcial de la figura 11 con la tapa suelta de su sujeción con el sistema de aseguramiento de la batería

Descripción detallada y mejor modo de la invención

Un sistema de aseguramiento de batería de acuerdo con la presente invención esta indicado con el número 10 en la figura 1. El sistema 10 esta configurado para usarlo en un vehículo 12 teniendo un conjunto de batería 14. El conjunto de batería es adaptado para dar energía a uno o más componentes de potencia con batería del vehículo 12. Por lo menos una porción del sistema de aseguramiento de la batería 10 es posicionable selectivamente para prevenir el conjunto de batería 14 de soltarse durante la operación del vehículo.

En los ejemplos e configuración descritos mas adelante el vehículo 12 es descrito como un vehículo de paseo para niños en la forma de un camión. Sin embargo, se apreciara que el sistema de aseguramiento de batería 10 puede ser configurado para el uso en cualquier tipo de vehiculos de paseo para niños teniendo uno o más

componentes energizados por batería Sin embargo, la invención no esta limitada a los ejemplos mostrados y descritos aquí, pero incluye todos tales como los vehiculos de paseo para niños Por ejemplo, el vehículo 12 puede tomar cualquiera de las diferentes formas a escala adaptados para simular vehiculos reales en escala reducida, incluyendo un carro, camión, bus, motocicleta, carruaje, tractor, equipo de construcción, etc Otros ejemplos incluyen vehiculos fantásticos que no tienen el modelo de tamaño natural, o el tamaño de adulto, como contraparte

Los vehiculos de paseo para niños 12 incluyen una estructura soporte o cuerpo 16 configurado para el tamaño de un niño, o un par de niños El cuerpo 16 es típicamente formado por una pluralidad de partes moldeadas, partes en plástico rígido aseguradas por medio de tornillos, tuercas, y sujetadores similares Puede ser entendido que el cuerpo 16 puede ser formado por cualquiera de otros materiales que cumplan la misma función Dependiendo de la forma particular, el cuerpo 16 puede incluir 1 o mas asientos 18 para recibir la talla de un niño

El vehículo 12 también incluye ruedas 20 que rotan acopladas al cuerpo 16, y un conjunto de impulsión 22 acoplada para manejar por lo menos una de las ruedas. Cualquier mecanismo apropiado para el conjunto de impulsión 22 puede ser usado, de acuerdo al estado del arte. Mientras el conjunto de impulsión es ilustrado en la figura 1 siendo acoplado a las ruedas delanteras, también se apreciara que el conjunto de impulsión puede ser acoplado para manejar una o ambas de las ruedas traseras o también las ruedas delanteras. Conjunto de impulsión 22 puede ser acoplado directamente a las ruedas, o puede ser acoplado indirectamente a través de uno o varios eslabones, piñones, ejes, etc. En el diseño del ejemplo, el conjunto de impulsión 22 incluye un sistema de motor energizado por batería 24 teniendo uno o más motores adaptados para manejar las ruedas. El conjunto motor 24 puede también estar configurado para mover otros componentes movibles del vehículo 12 dependiendo de la forma del vehículo. Por ejemplo, el conjunto motor puede ser acoplado para levantar o bajar la cuchilla de un buldózer o la cama e una volqueta, etc.

En el evento, el conjunto motor 24 es operablemente conectado al conjunto de batería 14 por conectores

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apropiados tales como cables, alambres, etc El vehículo 12 puede incluir uno o más elementos de control tales como el pedal 26 el cual es conectado al conjunto de batería 14 y/o el conjunto motor 24 El pedal 26 es operado por el conductor para controlar el conjunto motor y enseguida la operación de las ruedas Típicamente, el vehículo 12 incluye elementos de control para habilitar al conductor controlar la velocidad y dirección del conjunto motor En adición al pedal 26 cualquier otro tipo de elemento de control adecuado para usar en un vehículo de paseo para niños puede ser usado, incluyendo botones, switches, palancas, perillas etc

El vehículo 12 incluye un mecanismo de dirección tal como un volante 28 acoplado para accionar por lo menos una de las ruedas 20 Alternativamente, el mecanismo de dirección puede tomar cualquier forma adecuada para operarla por un niño, incluyendo barras, manuales etc En el conjunto de diseño ejemplo, el volante 28 es operado por el conductor para controlar la dirección de las ruedas delanteras, las cuales también son movidas por el conjunto de impulsión 22 Alternativamente, el mecanismo de dirección puede ser configurado para mover una o dos

ruedas que no estén movidas por el mecanismo de impulsión

El conjunto de batería 14 puede ser cualquier tipo de conjunto de batería adecuado para el uso con los vehículos de paseo para niños. Típicamente, el conjunto de batería 14 incluye uno o más de 6-voltios y/o 12-voltios baterías recargables adaptadas para energizar el conjunto de impulsión 22. Alternativamente, otros tipos de baterías pueden ser usadas las cuales tienen también el mismo o voltaje diferente. En cualquier evento, el conjunto de baterías es usualmente montado en una región de almacenamiento para batería del cuerpo 16 tal como el compartimiento de batería 30. Será apreciado que el compartimiento de batería puede tomar cualquier variedad de formas diferentes, tamaño y configuraciones dependiendo de la forma del vehículo 12, como también el tamaño y forma del conjunto de batería 14. En el diseño del ejemplo, el compartimiento de batería 30 está formado como una parte del cuerpo 16 adyacente a la parte del frente del vehículo. Alternativamente, el compartimiento de la batería puede ser dispuesto en cualquier localización deseada en el cuerpo 16.

Tipicamente, el compartimiento de batería 30 incluye por lo menos un orificio 32 a través del cual el conjunto de batería puede ser sacado o metido en el compartimiento de batería. El ejemplo del compartimiento de batería 30 tiene cuatro paredes y una pared de fondo, que son generalmente dimensionadas, formadas y arregladas para recibir el conjunto de batería 14 y prevenir movimientos sustanciales laterales del conjunto de batería. El orificio 32 forma la porción de arriba del compartimiento de batería y le permite el conjunto de batería ser introducido, o sacado, del compartimiento. Mientras el orificio se extiende enteramente entre cada pared lateral del compartimiento de batería del ejemplo para formar el límite superior o "pared" del compartimiento de batería, será apreciado que el orificio 32 debe alternativamente ser de menor tamaño y ser formado por cualquiera o varias paredes del compartimiento de batería.

El sistema de aseguramiento de la batería 10 está montado en el vehículo 12 y posicionado para selectivamente mantener el conjunto de batería 14 en el compartimiento de la batería 30. En el diseño de ejemplo mostrado en la figura 1, el sistema de aseguramiento de batería está montado en el cuerpo 16 adyacente al agujero

32 Alternativamente, el sistema de aseguramiento de la batería puede ser montado en cualquier ubicación adecuada para asegurar el conjunto batería en el compartimiento de batería

Teniendo atención ahora en la figura 2-3, el sistema de aseguramiento de batería 10 incluye un elemento de aseguramiento 34 que puede ser movido entre una primera, o posición nominal y una segunda, o posición retraída. Cuando el elemento de aseguramiento 34 está en su posición nominal, tal como se muestra en la figura 2, el se extiende por encima de por lo menos una porción del orificio 32 para por lo menos obstruir parcialmente el orificio. Como resultado, el elemento de aseguramiento 34 bloquea el conjunto de batería de ser removido cuando el elemento de aseguramiento está en la posición nominal. En el conjunto del ejemplo mostrado en la figura 2, el elemento de aseguramiento 34 pasa por encima de una porción de la parte superior del conjunto de batería 14, de tal manera previniendo que el conjunto batería sea movido hacia arriba, fuera del compartimiento de batería. Similarmente, si el vehículo 12 se volcara mientras el elemento de aseguramiento 34 esté en la posición nominal, el elemento de aseguramiento prevendrá que el conjunto

bateria sea movido lateralmente o se caiga fuera del compartimentote batería

Cuando el elemento de aseguramiento 34 esté en la posición retraída, tal como se muestra en la figura 3, no bloquea la remoción del conjunto de batería 14 del compartimiento 30. Entonces, el sistema de aseguramiento de batería 10 permite que pase la batería a través del orificio 32 cuando el elemento de aseguramiento esté en la posición retraída. En el diseño del ejemplo, el elemento de aseguramiento 34 no se extiende sobre una porción del agujero cuando el elemento de aseguramiento está en la posición retraída. Sin embargo, será apreciado que en algunos arreglos alternativamente, el elemento de aseguramiento 34 puede continuar extendido sobre una porción del compartimiento de batería cuando esta en la posición retraída sin bloquear la salida del conjunto de batería. Un ejemplo de tal arreglo está mostrado en la figura 5 en el cual el compartimiento de batería es sustancialmente más amplio que la batería.

El elemento de aseguramiento 34 puede tomar cualquier forma adecuada para mantener el conjunto batería 14 en su lugar. En el diseño del ejemplo mostrado

en la figura 2, el elemento de aseguramiento tiene una forma de una barra en U. Adicionalmente, el elemento de aseguramiento puede ser construido en cualquier material adecuado adaptado para mantener el conjunto de batería en su lugar, incluyendo metal (por ejemplo, acero, aluminio, etc.), plástico, materiales compuestos etc. Será apreciado que mientras un cuerpo específico del elemento de aseguramiento 34 como se muestra en la figura 2-3, el elemento de aseguramiento puede tomar una variedad amplia de otras formas como se desee o benéficas para una aplicación particular. Como un ejemplo, un cuerpo de diseño alternativo de un elemento de aseguramiento 34 se describe en seguida.

Como se menciona arriba, el elemento de aseguramiento 34 se puede mover selectivamente entre la posición nominal y la posición retraída por el usuario. Esto permite que el conjunto de batería pueda ser rápida y fácilmente instalado o removido. Opcionalmente, el elemento de aseguramiento puede incluir una porción de aseguramiento 36 y una porción de manija 38. La porción de aseguramiento 36 está adaptada para extenderse adyacente de por lo menos una porción del conjunto de batería cuando el elemento de aseguramiento está en la posición

nominal La porción manual o manija 38 esta adaptada para extenderse desde el orificio de tal manera que la porción manual esté lejos del conjunto de batería Esto permite al usuario de agarrar fácilmente la porción manual o manija 38 y mover el elemento de aseguramiento como desee

El sistema de aseguramiento de batería 10 también incluye un elemento de resorte 40 configurado para mantener el elemento 34 hacia la posición nominal cuando el elemento de aseguramiento esta en la posición retraída Esto asegura que el elemento de aseguramiento no se mueva accidentalmente a la posición retraída cuando el vehículo 12 está en operación También, para instalar o remover el conjunto batería, el usuario agarra la manija o porción manual 38 y mueve el elemento de aseguramiento a la posición retraída contra la fuerza del elemento resorte Preferiblemente, el elemento resorte está configurado para alcanzar en respuesta a una fuerza de movimiento relativamente moderada aplicada por el usuario El usuario entonces mantiene el elemento de aseguramiento en la posición retraída mientras instala o remueve el conjunto batería Una vez el usuario suelta la porción manual o manija, el elemento de aseguramiento

automáticamente se mueve a la posición nominal bajo la fuerza del elemento resorte

Se apreciará que el elemento resorte 40 podrá tomar una o varias de las diferentes variedades de formas adaptadas para mantener el elemento de aseguramiento 34 hacia la posición nominal. En el diseño del ejemplo, el elemento resorte 40 está en la forma de un resorte de compresión acoplado al elemento de retención. Alternativamente, el resorte 40 puede ser un resorte de tensión, un resorte de torsión, resortes combinados, etc. En cualquier evento, el resorte 40 está acoplado al elemento de aseguramiento de tal manera de estar flexionado elásticamente cuando el elemento de aseguramiento se mueva de la posición nominal a la posición retraída.

El resorte 40 puede estar acoplado al elemento de aseguramiento 34 en cualquiera de las diferentes variedades. En el diseño o cuerpo del ejemplo, el sistema de aseguramiento de batería 10 incluye una caja 42 montada en el cuerpo adyacente del compartimiento 30 y el orificio 32. La caja 42 está fijada al cuerpo del vehículo 16 por cualquier elemento de sujeción adecuado.

tal como tornillos, clips, etc. Alternativamente, la caja puede estar formada integralmente por un cuerpo. En cualquier evento, una pata 44 del elemento de aseguramiento 34 se desliza en la caja 42. El resorte 40 está dispuesto en la caja y acoplado a la pata 44 para instar el elemento de aseguramiento hacia la posición nominal. La caja 42 está formada para definir una cámara de resorte 46 configurada para recibir el resorte 40. La pata 44 del elemento de aseguramiento pasa a través de unas aperturas en cada extremo de la cámara de resorte 46. El resorte 40 está generalmente enrollado suelto alrededor de una pata entre la pared 48 trasera y la cámara de resorte y una arandela 50 montada en la pata 44. La arandela 50 es un tope contra el hombro 52 formado en la pata 44.

En el diseño del ejemplo, una tapa final 54 se monta en el extremo de la pata 44. Esta tapa final 54 es mas grande que la apertura de la pared trasera 48, y previene que la pata 44 se introduzca hacia o afuera de la cámara del resorte. La tapa final 54 esta formada y es un conector a presión, tal como es conocido por aquellos expertos en el arte. Como resultado, ambos el elemento de aseguramiento 34 y el elemento de resorte 40 están

acoplados a la caja 42 y al cuerpo del vehículo 16 y no son removibles del cuerpo sin desbaratar o romper el sistema de aseguramiento de batería o separar la caja del cuerpo. Entonces, en contraste con los sistemas existentes que usan un elemento de aseguramiento que se pueda soltar, el sistema de aseguramiento de batería 10 es fácilmente de usar desde que nunca puede ser removido del vehículo. Además el sistema 10 es menos susceptible de falla debido a pérdidas o que se dañen partes.

Como se puede ver en la figura 3, el resorte 40 se comprime entre la arandela 50 y la pared trasera 48 cuando el elemento de aseguramiento se mueve a la posición retraída. Entonces, el resorte imparte una fuerza sobre la arandela y el elemento de aseguramiento, como un resultado de la energía potencial almacenada en el resorte. Típicamente, el resorte es de alguna manera comprimido aun cuando el elemento de aseguramiento está en la posición nominal de tal manera que exista una fuerza sobre el elemento de aseguramiento para mantenerlo en la posición nominal. Opcionalmente, una tapa removible selectivamente 58 puede ser proveída para tapar la cámara de resorte y resorte para prevenir que suciedad pueda

entrar en la cámara de resorte y proteger al niño de ser agarrado accidentalmente por el resorte

En el diseño del ejemplo mostrado en la figura 2 y 3, la otra pata 56 en forma de U del elemento de aseguramiento 34 se desliza recibida en un canal moldeado 60 de la caja 42. Aunque la pata 56 es mostrada como mas corta que la pata 44, se apreciará que la longitud de la pata 56 puede ser alternativamente igual a, o mayor, que la longitud de la pata 44. También se puede ver que la cámara de resorte 46 y el canal 60 están sustancialmente en unos carriles paralelos que guían el movimiento de las patas 44 y 56, respectivamente. Como resultado, el elemento de aseguramiento es obligado a moverse o deslizarse a por lo menos sustancialmente una única dirección alineada con la cámara de resorte 46 y el canal 60, hacia y hacia afuera del orificio 32. Alternativamente, la cámara de resorte y el canal pueden ser configurados para guiar el momento del elemento de aseguramiento en otras maneras.

Poniendo atención ahora a la figura 4, se puede ver que el elemento de aseguramiento 34 es dispuesto para deslizarse en una dirección generalmente paralela con la

tapa superior 62 del conjunto de batería 14. Se apreciará que el sistema de aseguramiento 10 puede ser configurado, relativo a la altura del conjunto de batería 14, de tal manera que la porción de aseguramiento 36 descansa en contacto con la tapa superior 62 cuando el elemento de aseguramiento está en la posición nominal. Alternativamente, la porción de aseguramiento puede extenderse por encima de la tapa superior 62 sin tener contacto con el conjunto batería. Esta última configuración se muestra en la figura 4 por el conjunto de batería, en el cual la tapa superior se indica en líneas discontinuas.

Sin tener en cuenta si la porción de aseguramiento está en contacto con la parte superior del conjunto batería 14, se apreciará que la fuerza impartida hacia el elemento de aseguramiento por el resorte 40 es a lo largo de la dirección paralela con la tapa superior 62. Entonces en contraste con los sistemas existentes, el elemento de aseguramiento 34 está configurado no para transferir la fuerza del resorte hacia el conjunto de batería. Esto libera al conjunto de batería de una fuente de presión de largo tiempo que pueda dañar el conjunto batería. Alternativamente, el sistema de aseguramiento de

bateria puede ser configurado para transferir algo o toda la fuerza del sistema de resorte a la batería

Será apreciado que el sistema de aseguramiento de batería 10 pueda ser arreglado en una variedad de formas diferentes dependiente de alguna configuración particular del vehículo 12, el compartimiento de batería 30, y el conjunto de batería 14. Por ejemplo, la figura 5 ilustra un arreglo alternativo en el cual el elemento de aseguramiento 34 está orientado de tal forma que las regiones finales del elemento en forma de U se extienden separadamente del conjunto batería, mientras que la región central se extiende hacia debajo de la tapa del conjunto batería. En contraste al cuerpo mostrado en las figuras 2-4, entonces, la región central del elemento de aseguramiento forma la porción de aseguramiento 36, mientras que las regiones finales forman la manija o porción manual 38. Sin embargo, el elemento de aseguramiento 34 es selectivamente deslizable hacia afuera del orificio 32 para permitir el pasaje del conjunto batería 14 hacia adentro, o hacia fuera, del compartimiento 30. El elemento de resorte tal como se describió arriba instala el elemento de aseguramiento de la

posición retraída por fuera del orificio 32 a la posición nominal obstruyendo el orificio

También como se muestra en la figura 5, el conjunto de batería del ejemplo 14 incluye un socket 39 adaptado para agarrar un plug y un conjunto de cable 41. El conjunto 41 se acopla al conjunto motor 24 (no mostrado) para llevar la corriente eléctrica del conjunto de batería al conjunto motor. Alternativamente, el vehículo 12 debe incluir otros mecanismos para la conducción de la potencia eléctrica del conjunto batería al conjunto motor. El arreglo ilustrado en la figura 5 también incluye un compartimiento de batería 30 que es sustancialmente mayor que el conjunto de batería 14. Así, las paredes laterales del compartimiento de batería no soportan suficientemente el conjunto batería contra el movimiento lateral en el compartimiento. En cambio, el compartimiento de batería del ejemplo de la figura 5 incluye uno o varios topes 43 posicionados para adyacentemente extender uno o más lados del conjunto batería y prevenir el movimiento lateral del conjunto batería dentro del compartimiento batería.

Poniendo atención ahora a las figuras 6-9, una disposición alternativa del sistema de aseguramiento de batería 10 se muestra. El elemento de aseguramiento 34 está en forma de una barra rectangular que se desliza en la caja 42. Alternativamente, el elemento de aseguramiento 34 puede estar formado y tener cualquier otra forma adecuada como se desee. En el diseño mostrado, el elemento de aseguramiento 34 está formado por una estructura en plástico moldeada, pero puede alternativamente estar conformada en varias maneras y/o de varios materiales. En cualquier evento, el elemento de aseguramiento incluye una porción de aseguramiento 36 la cual se extiende generalmente paralela al lado superior del conjunto de batería 14.

En la posición nominal mostrada en la figura 6, la porción de aseguramiento 36 se extiende hacia el compartimiento de batería 30 a por lo menos obstruir parcialmente el orificio 32 y bloquear la instalación o la remoción del conjunto de batería. El elemento de aseguramiento se representa como un cubrimiento de la porción central del conjunto de batería para obstruir el orificio. Sin embargo, se puede apreciar que el elemento de aseguramiento puede alternativamente ser configurado

para cubrir otras porciones del conjunto de batería La relativa amplia y forma plana de la porción de aseguramiento también provee un soporte estable al conjunto batería en el evento de que el vehículo se vuelque La porción manual 38 está configurada para ser cogida por el usuario para mover el elemento de aseguramiento a la posición retraída en la caja La porción manual o manija puede ser conformada en una variedad de formas alternativas adecuadas para ser agarrada Un ejemplo de una forma alternativa se indica en líneas discontinuas en la figura 7

El elemento de aseguramiento 34 es alojado a través de una apertura en la caja 42 y se extiende generalmente paralelo a la superficie superior interna 64 de la caja La porción de atrás del elemento de aseguramiento incluye un par de ranuras guías largas 66 adaptadas para recibir los elementos guías 68 Los elementos guías se extienden hacia debajo de la superficie interna superior 64 y hacia las ranuras guías 66 Los elementos 68 son deslizables en las ranuras 66 y sustancialmente obligan el movimiento del elemento de aseguramiento 34 a una sola dirección Cada ranura guía incluye paredes finales o opuestas 70 las cuales limitan la longitud del recorrido del elemento

de aseguramiento, así previniendo que el elemento de aseguramiento se deslice hacia fuera de la caja 42

El elemento de aseguramiento Alternativo 34 es también formado para definir una cámara de resorte 72 entre las raras guías 66. La cámara de resorte 72 es adaptada para recibir el resorte 44 u otro elemento elástico adecuado. El resorte es encapsulado en la cámara 72 con una superficie interna superior 64. Un tope 74 se encuentra hacia atrás de la superficie interior superior en la cámara de resorte 72. El resorte 40 está posicionado entre el tope 74 y la pared frontal 76 de la cámara de resorte. Cuando el elemento de aseguramiento se mueve hacia su posición retraída como se muestra en la figura 7, la pared frontal 76 se mueve hacia el tope 74, así comprimiendo el resorte 40. Como resultado, el resorte insta al elemento de aseguramiento hacia atrás a su posición nominal.

El elemento de aseguramiento 34 es agarrado a la superficie interna superior adyacente 64 por uno o varios clips 78 los cuales se extienden hacia debajo de la superficie interior superior a lo largo de los lados del elemento de aseguramiento. Cada clip incluye un labio que

se proyecta hacia adentro que soporta la parte de abajo donde se desliza el elemento de aseguramiento. El elemento de aseguramiento también es sostenido por la superficie interna superior de la caja 42 por el elemento base 80. La caja está montada en el cuerpo 16 por encima del elemento base 80, el cual se extiende hacia arriba de la caja a una posición entre el elemento de aseguramiento 34 y previene el elemento de aseguramiento de moverse de la superficie interna superior 64. Alternativamente, el elemento de aseguramiento puede ser soportado por la superficie interna superior adyacente de la caja por otros mecanismos.

Una conformación alternativa mostrada en la figura 6-9, la caja 42 incluye una pluralidad de un buje para montaje 82. Los bujes de montaje están adaptados para ajustarse encima de unos postes 84. Cada buje 82 está adaptado para recibir un tornillo o un sujetador similar (no mostrado), el cual se extiende dentro y se acopla a los agujeros roscados (no mostrados) en los postes 84. Entonces, el elemento de aseguramiento 34 y el elemento elástico 40 no pueden removerse del cuerpo sin desbaratar o romper el elemento de aseguramiento. Alternativamente,

23

la caja puede ser montada en el cuerpo 16 en otras maneras mostrada a aquellos expertos en la técnica

Como se describe arriba, el sistema de aseguramiento batería 10 provee un sistema seguro para la prevención que el conjunto de batería del vehículo se suelte durante la operación del vehículo. Además, el sistema 10 está configurado para permitir que el conjunto batería pueda ser instalado o removible fácilmente y sin el uso de herramientas. Mientras varias modalidades alternativas y arreglos de sistemas de aseguramiento de batería 10 han sido mostrados y descritos antes, será apreciado por aquellos expertos en la técnica que otras numerosas modalidades, arreglos y modificaciones son posibles y, entonces, dentro del campo de la invención. Por ejemplo, debe ser entendido que el sistema de aseguramiento de batería de acuerdo con la presente invención debe ser configurado para acoplarse con cualquiera de los lados del conjunto de la batería. Para proveer un ejemplo ilustrativo de este punto, la figura 10 ilustra un conjunto batería 40 que es adaptado para ser insertado el lado primero en el compartimiento de la batería 30 del cuerpo 16 en un vehículo de paseo. En tal configuración, la porción de aseguramiento 36 se extiende por lo menos

~~25~~
~~25~~
14

parcialmente a través del orificio 32 para acoplarse, o estar en una posición de acoplamiento, al lado de la pared 90 del conjunto de batería

El sistema de aseguramiento de batería 10 de acuerdo con la presente invención puede ser también usada para asegurar elementos del vehículo, otros que el conjunto de batería 14. Un ejemplo de tal configuración está mostrado en la figura 11, en el cual el sistema 10 es adaptado para asegurar una parte de la cubierta 92 de un cuerpo de vehículo 16 sobre el orificio 32 del compartimiento de la batería 30. La porción 92 también puede ser descrita como una tapa o puerta para compartimiento 30. También es a menudo deseable tener una tapa o puerta de tal manera que el conjunto batería (asociado a un plug o un conjunto de cable 41) esté protegido del contacto de elementos externos incluyendo el conductor cuando la tapa esté en su lugar. La tapa 92 puede parcialmente por lo menos, si no sustancialmente o completamente, cubrir (o tapar) el orificio del compartimiento de la batería. También está dentro del campo de la invención que la tapa forme otra porción del cuerpo del vehículo, tal como por lo menos una porción del asiento del vehículo.

De acuerdo a antecedentes tapas convencionales son removibles y agarradas al cuerpo vía sujetadores mecánicos tales como tornillos pueden ser removidos para permitir el acceso al compartimiento de la batería y luego reinstalados para reasegurar la tapa en su posición cerrada. Estos elementos sujetadores son los típicos separables de la tapa y como tales son removidos de la tapa por que debido al tiempo o herramientas requeridas para remover y reasegurar los sujetadores. Como un resultado tapas convencionales son a menudo dejadas inseguras al cuerpo del vehículo y removidas del vehículo.

El sistema de aseguramiento de la batería mostrado en la figura 11 también ilustra a por lo menos una porción del sistema puede ser localizado dentro o por debajo del cuerpo 16 del vehículo, con una porción manual 38 siendo accesible de la parte externa del cuerpo de tal manera que el usuario pueda selectivamente configurar el sistema entre su posición nominal y retraída. Por ejemplo, la porción manual o manija 38 puede ser accesible a través de una ranura u otro agujero en el cuerpo, y/o puede extenderse por lo menos parcialmente a través del agujero.

En el cuerpo mostrado en la figura 11 la tapa incluye una estructura de acople 94 tal como el sujetador 96 el cual es adaptado para engranarse selectivamente reteniendo la porción 36 para retener selectivamente asegurar la tapa en posición cerrada. Cuando el sistema de aseguramiento de batería es empujado a su posición retraída tal como se muestra en la figura 12, la porción de aseguramiento no solamente es suficiente para devolver del agujero 32 tal que el conjunto de batería pueda ser removido del compartimiento de batería pero también soltar la estructura de acople de tal forma que la porción de tapa puede ser movida a la posición abierta que permita el acceso del conjunto de batería 14. En la figura 11 la porción de tapa es mostrada incluyendo los topes 98, tales como las bisagras 100, los cuales habilitan la tapa de pivotar relativamente al cuerpo. También está en el campo de la invención que la porción de tapa 92 pueda estar formada sin tope 98 en tal caso la porción de tapa deberá ser configurada para ser completamente removida del cuerpo después de soltar la estructura 94 de acople por la porción de aseguramiento 36.

En el cuerpo ilustrativo mostrado en la figura 12, puede ser visto que el compartimiento de batería 30 incluye un pasaje 97 en el cual la estructura de acople 94 puede ser extendida cuando la porción de tapa está en su posición cerrada. Está dentro del campo de la invención del pasaje 97 sea parte del compartimiento de batería como se muestra en la figura 12, o que el pasaje pueda ser separado del compartimiento de batería por otra porción del cuerpo. En la figura 12 puede ser visto que tal sujetador 96 incluye un agujero o pasaje 102 en el cual la porción de aseguramiento 36 puede por lo menos ser parcialmente extendida para permitir la no intencional remoción de la porción de etapa 92 de su posición cerrada. Esta dentro del campo de la invención que la estructura de acople 94 pueda tener cualquier configuración adecuada a adaptar para ser selectivamente acoplada por la porción de aseguramiento 36 a selectivamente asegurar la porción de tapa en su posición cerrada. Por consiguiente debe ser entendido que los diseños mostrados en la figura 11 y 12 son solo un ejemplo ilustrativo de una estructura de acople adecuada.

Se cree que el conjunto de descripción anterior en adelante abarque invenciones múltiples distintas con

utilidad independiente. Cada una de estas invenciones ha sido descubierta en su forma preferida, las configuraciones específicas como se descubrieron e ilustran aquí no deben ser consideradas como en un sentido de limitar las numerosas variaciones que son posibles. El sujeto del asunto de las invenciones incluyen todas las novedades y combinaciones y sub combinaciones no obvias de los varios elementos figuras, funciones y/o propiedades descubiertas aquí. Donde las reivindicaciones dicen "a" o "un primer" elemento o equivalente, tales reivindicaciones deben ser entendidas para incluir incorporaciones de uno o más de tales elementos y requiriendo o excluyendo 2 o más de tales elementos.

Se cree que las siguientes reivindicaciones particularmente enfatizan ciertas combinaciones o sub combinaciones que están dirigidas a una de las invenciones descubiertas y son novedades y no obvias. Las invenciones incorporadas en otras combinaciones y sub combinaciones de figuras, funciones, elementos y/o propiedades deben ser reivindicadas a través de enmienda de las presentes reivindicaciones o presentación de las nuevas reivindicaciones en este o aplicación relacionada.

Tal enmienda o nuevas reivindicaciones donde ellas están dirigidas a una invención diferente o dirigida a la misma invención, donde diferente, amplio, angosto o igual en el campo de las reivindicaciones originales, también son miradas como incluidas en el asunto del sujeto de las invenciones del presente descubrimiento

REIVINDICACIONES

1 Un vehículo de paseo para niños que comprende un cuerpo de vehículo adaptado para transportar un niño,

una pluralidad de ruedas acopladas al cuerpo,

un conjunto de impulsión acoplado al manejo de por lo menos una pluralidad de ruedas, para mover el conjunto incluyendo un conjunto de motor teniendo de por lo menos un motor manejado por batería,

un conjunto de aseguramiento de batería montado en el cuerpo, en donde el conjunto de aseguramiento de batería comprende

un elemento de aseguramiento selectivamente movable entre la primera posición la cual el elemento de aseguramiento obstruye la remoción del conjunto de batería del cuerpo, y una segunda posición en el cual el elemento de aseguramiento no obstruye la remoción del conjunto batería del cuerpo, y

un elemento elástico acoplado al elemento de aseguramiento y configurado para instar el elemento de aseguramiento de la segunda posición hacia la primera posición

2 El vehículo de la reivindicación 1, en donde el cuerpo incluye un compartimiento de batería adaptado para mantener el conjunto de batería y en donde el compartimiento de batería tiene un agujero, y en donde el elemento de aseguramiento por lo menos parcialmente obstruye el agujero cuando está en la primera posición

3 El vehículo de la reivindicación 2, en donde el agujero es adaptado para permitir el conjunto batería de ser bajado o levantado hacia fuera del compartimiento batería, y en donde el elemento de aseguramiento por lo menos parcialmente pasa por encima de la porción superior del conjunto batería donde el conjunto batería está en el compartimiento de batería y el elemento de aseguramiento está en la primera posición

4 El vehículo de la reivindicación 2, en donde el agujero es adaptado para permitir que el conjunto de batería para ser insertado dentro o removido del compartimiento de batería, y donde el elemento de aseguramiento por lo menos parcialmente está sobre la porción del lado del conjunto batería cuando el conjunto

fe batería está en el compartimiento de batería y el elemento de aseguramiento está en la primera posición

5 El vehículo de la reivindicación 2, en donde el elemento elástico está configurado para impartir una fuerza en elemento de aseguramiento para instar al elemento de aseguramiento hacia la primera posición y en donde el elemento de aseguramiento está configurado no para transferir la fuerza al conjunto de la batería

6 El vehículo de la reivindicación 5, en donde el elemento de aseguramiento está configurado no para hacer contacto con el conjunto de batería en donde el conjunto de batería está en el compartimiento de batería y el elemento de aseguramiento está en la primera posición

7 El vehículo de la reivindicación 2, en donde el compartimiento de batería está dimensionado de por lo menos sustancialmente corresponde a la forma del conjunto batería

8 El vehículo de la reivindicación 1, en donde el elemento de aseguramiento está acoplado en forma deslizante al cuerpo para un movimiento sustancialmente obligado a una sola dirección relativa al cuerpo

9 El vehículo de la reivindicación 1, en donde el elemento de aseguramiento está acoplado sin poderlo remover del cuerpo

10 El vehículo de la reivindicación 9, en donde el elemento elástico está acoplado sin poder removerlo del cuerpo

11 El vehículo de la reivindicación 1, en donde el elemento elástico incluye un resorte

12 El vehículo de la reivindicación 1, en donde el elemento de aseguramiento incluye una porción de aseguramiento adaptada para extender adyacente a por lo menos una porción del conjunto batería en donde el elemento de aseguramiento está en la primera posición y una porción manual alejada del conjunto batería y adaptada para ser agarrado por el usuario para mover el elemento de aseguramiento de la primera posición a la segunda posición en contra de la fuerza del elemento elástico

13 El vehículo de la reivindicación 12, en donde el cuerpo incluye una ranura a través de la cual la porción manual es accesible por el usuario para mover el elemento de aseguramiento de la primera posición a la segunda posición en contra de la fuerza del elemento elástico

14 El vehículo de la reivindicación 13, en donde la porción manual se extiende a por lo menos parte de la ranura

15 El vehículo de la reivindicación 2, más incluye una tapa de batería adaptada para por lo menos obstruir parcialmente el agujero en donde en la primera posición, el elemento de aseguramiento está posicionado para retener la tapa de la batería en la primera posición, de la tapa en la cual la tapa de la batería está posicionada para obstruir la remoción del conjunto batería del compartimiento de batería, y además en donde la segunda posición la tapa de la batería puede ser suficientemente removida del agujero a una segunda posición de la tapa en la cual el conjunto batería puede ser removido desde el compartimiento de la batería a través del agujero

16 El vehículo de la reivindicación 15, en donde la tapa de la batería está pivotada y acoplada al cuerpo

17 El vehículo de la reivindicación 15, en donde el elemento elástico está configurado para impartir una fuerza sobre el elemento de aseguramiento para empujar el elemento de aseguramiento hacia la primera posición, y donde el elemento de aseguramiento está figurado no para transferir la fuerza hacia la tapa de la batería

18 El vehículo de la reivindicación 15, en donde la tapa de la batería incluye un sujetador o alojamiento y además en donde el elemento de aseguramiento está adaptado para acoplar el sujetador cuando el compartimiento de batería está en la primera posición la tapa y el elemento de aseguramiento está en la primera posición

19 El vehículo de reivindicación 18, en donde el sujetador define el pasaje en el cual el elemento de aseguramiento se extiende por lo menos parcialmente cuando la tapa está en la primera posición de tapa y el elemento de aseguramiento está en la primera posición

20 El vehículo de reivindicación 15, en donde la tapa de batería está adaptada para cubrir completamente el agujero cuando la tapa está en la primera posición

21 El vehículo de la reivindicación 15, en donde en el elemento de aseguramiento incluye la porción de aseguramiento adaptada para extender adyacente de por lo menos una porción del conjunto batería cuando el elemento de sujeción está en la primera posición, y la porción manual está apartada del conjunto de batería y adaptado para que el usuario lo sujete para mover el elemento de aseguramiento desde la primera posición a la segunda posición en contra de la fuerza del elemento elástico

22 El vehículo de reivindicación 21, en donde el cuerpo incluye una ranura a través de la cual la porción manual es accesible desde el exterior del cuerpo del vehículo

23 El vehículo de reivindicación 22, en donde la porción manual se extiende por lo menos parcialmente a través de la ranura

24 El vehículo de reivindicación 15, en donde el elemento de aseguramiento está acoplado al cuerpo y obligado a deslizarse a lo largo de un plano único entre la primera y a segunda posición

25 El vehículo de reivindicación 24, en donde el plano se extiende generalmente paralelo a un lado del conjunto batería donde el conjunto batería está en el compartimiento de batería

26 El vehículo de reivindicación 25, en donde el plano además se extiende generalmente paralelo a la tapa de la batería en donde la tapa de la batería está en la primera posición de la tapa

27 El vehículo de reivindicación 15, en donde el elemento de aseguramiento está configurado no directamente para acoplar el conjunto batería cuando el conjunto batería es posicionado en el compartimiento batería y el elemento de aseguramiento está en la primera posición

28 El vehículo de reivindicación 15, donde el conjunto de aseguramiento de la batería incluye una caja montada en el cuerpo y adaptada para recibir deslizando a por lo menos una porción del elemento de aseguramiento y donde el elemento elástico incluye un resorte dispuesto en la caja

29 El vehículo de la reivindicación 18, do0nde el compartimiento de batería incluye un pasaje en donde en el cual el sujetador se extiende parcialmente por lo menos cuando la tapa de la batería está en la primera posición de la tapa

30 Un vehiculo de paseo para niños teniendo uno o más componentes necesitados por bateria, el vehículo comprende

Un cuerpo de vehículo,

Un conjunto de batería teniendo por lo menos una batería,

Un compartimiento de batería dispuesto en el cuerpo del vehículo y adaptado para tener el conjunto batería, en donde el compartimiento de batería incluye por lo menos un agujero adaptado para el pasaje del conjunto batería hacia adentro o afuera del compartimiento de batería, y

un conjunto de aseguramiento de bateria dispuesto adyacente al compartimiento de batería el conjunto de aseguramiento de batería incluye un elemento de aseguramiento conectado a un elemento elástico,

en donde el elemento de aseguramiento es selectivamente movable de una posición nominal la cual

obstruye el agujero para impedir el pasaje del conjunto batería a una posición retraída el cual permite el pasaje del conjunto de batería a través del agujero

Y

En donde el elemento elástico está configurado para instar el elemento de aseguramiento hacia la posición nominal en donde el elemento de aseguramiento está en la posición retraída

31 El vehículo de reivindicación 30, en donde el elemento de aseguramiento es no removible conectado al cuerpo

32 El vehículo de reivindicación 30 en donde el elemento de aseguramiento está acoplado al cuerpo y obligado a deslizarse a lo largo de una sola dirección entre la posición inicial y la posición retraída

33 El vehículo de reivindicación 32, en donde el elemento de aseguramiento está obligado a deslizarse a lo largo de una sola dirección generalmente paralela con el lado superior del conjunto batería en donde el conjunto batería está en el compartimiento de batería

34 El vehículo de reivindicación 30, en donde el agujero forma una porción superior del compartimiento de batería, y donde el elemento de aseguramiento parcialmente cubre por lo menos una porción superior del conjunto batería en donde el conjunto batería está en el compartimiento batería y el elemento de aseguramiento está en la posición nominal

35 El vehículo de reivindicación 34, en donde el elemento de aseguramiento está configurado no para impartir una presión hacia abajo sobre el conjunto batería cuando el conjunto batería está sujeto en el compartimiento batería y el elemento de sujeción está en la posición nominal

36 El vehículo de la reivindicación 30, donde el elemento de aseguramiento incluye una porción de aseguramiento adaptada para extenderse adyacente a por lo menos una porción del conjunto batería cuando el elemento de aseguramiento está en la posición nominal y la posición manual que está alejada del conjunto batería y adaptada para hacer asida por el conductor para mover el elemento de aseguramiento de la posición nominal a la

posición retraída en contra de la fuerza del elemento elástico

37 El vehículo de reivindicación 30, donde el conjunto de aseguramiento de batería incluye una caja montada en el cuerpo y adaptada para recibir deslizando de por lo menos una porción del elemento de aseguramiento en donde el elemento elástico incluye un resorte dispuesto en la caja

38 Un vehículo de paseo de niños comprende

un conjunto De batería teniendo una o más baterías,

Un cuerpo de vehículo adaptado para llevar un niño, el cuerpo incluye un compartimiento de batería para sujetar el conjunto batería y teniendo por lo menos un orificio a través del cual el conjunto batería puede pasar,

Una o más ruedas acopladas al cuerpo,

Un conjunto inclusión acoplado a la conducción de por lo menos una de las ruedas, el conjunto de inclusión incluye el conjunto motor teniendo uno o más motores energizados por batería conectados operablemente al conjunto batería,

Un elemento de aseguramiento acoplado al cuerpo y posicionado para extender por encima por lo menos una

porción del agujero para obstruir el paso del conjunto batería y un elemento elástico acoplado al elemento de aseguramiento en donde el elemento de aseguramiento es selectivamente deslizable alejándose del agujero en contra de la fuerza del elemento elástico

39 El vehículo de reivindicación 38, además comprende una caja montada en el cuerpo en donde a por lo menos una porción del elemento de aseguramiento es recibido en la caja y deslizable en la caja generalmente a lo largo de una sola dirección

40 El vehículo de reivindicación 39, donde el elemento elástico es dispuesto en la caja y configurado para instar el elemento de aseguramiento hacia el agujero

41 El vehículo de reivindicación 40, donde la caja incluye una tapa adaptada para encerrar el elemento elástico

42 El vehículo de reivindicación 39, en donde el elemento de aseguramiento incluye una porción manual o manija extendible alejándose del agujero y adaptada para

que el usuar o la agarre para deslizar el elemento de
aseguramiento lejos del agujero

RESUMEN

Un sistema de aseguramiento de batería para un vehículo de paseo de niños. El sistema incluye un elemento de aseguramiento que es selectivamente movable entre una primera posición nominal en la cual el elemento de aseguramiento bloquea la remoción del conjunto batería del cuerpo del vehículo, y una segunda posición en la cual el elemento de aseguramiento no bloquea la remoción del conjunto batería. El sistema de aseguramiento de batería también incluye un elemento elástico acoplado al elemento de aseguramiento y configurado para instar el elemento de aseguramiento desde la segunda posición hacia la primera posición. En algunos cuerpos o diseños el sistema de aseguramiento de batería es además adaptado para asegurar partes del vehículo notros que el conjunto batería.

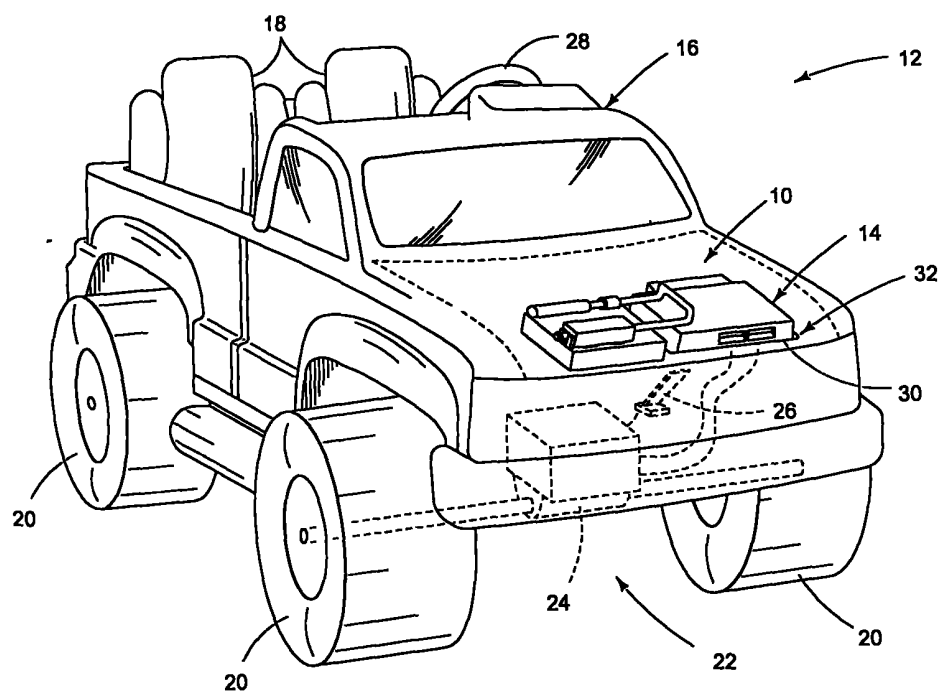
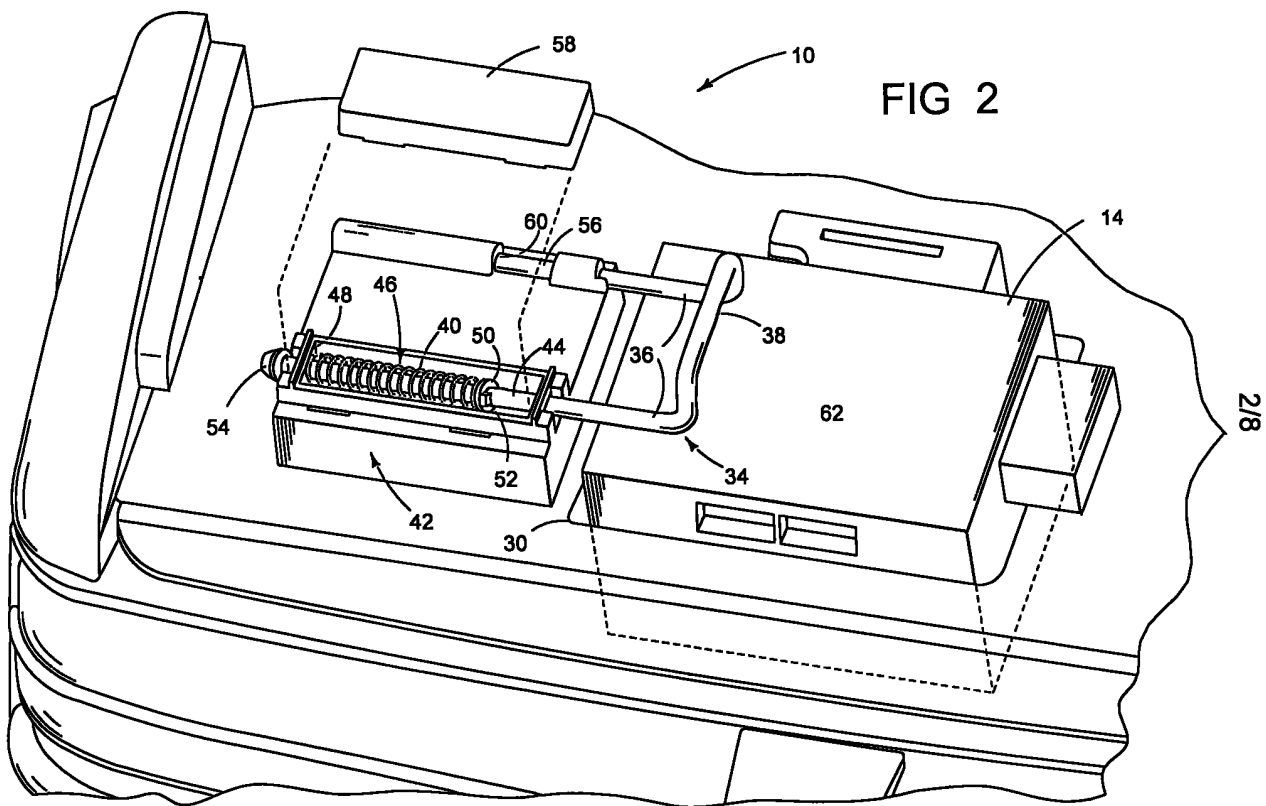
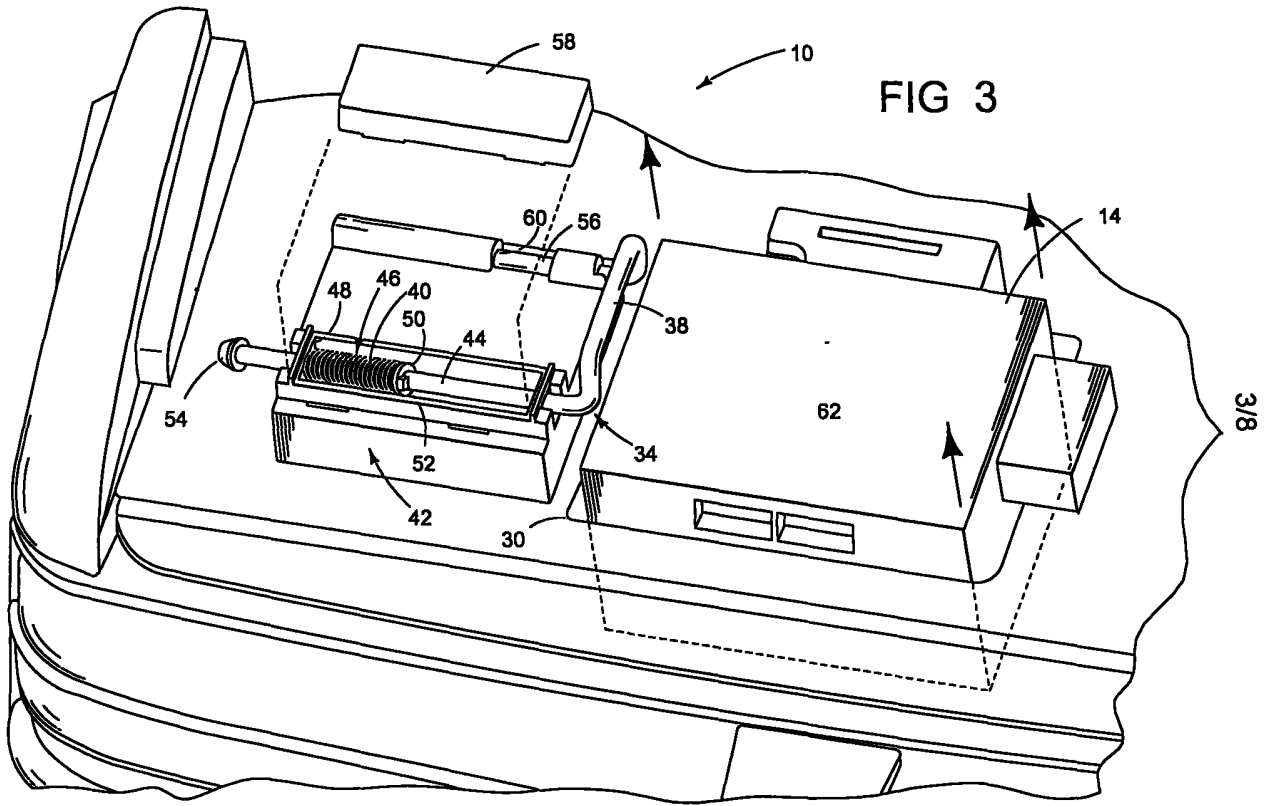


FIG 1



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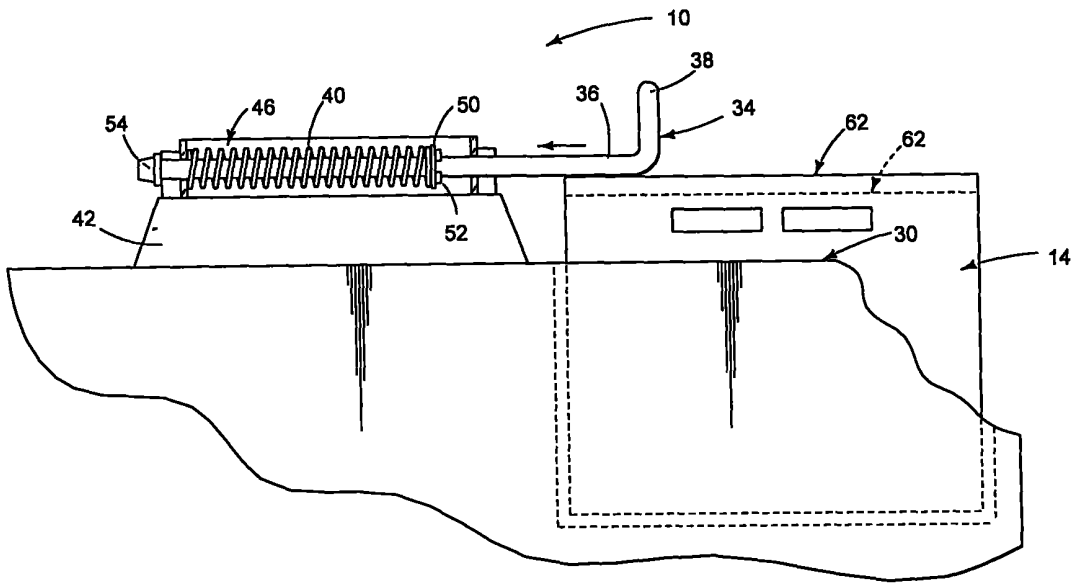


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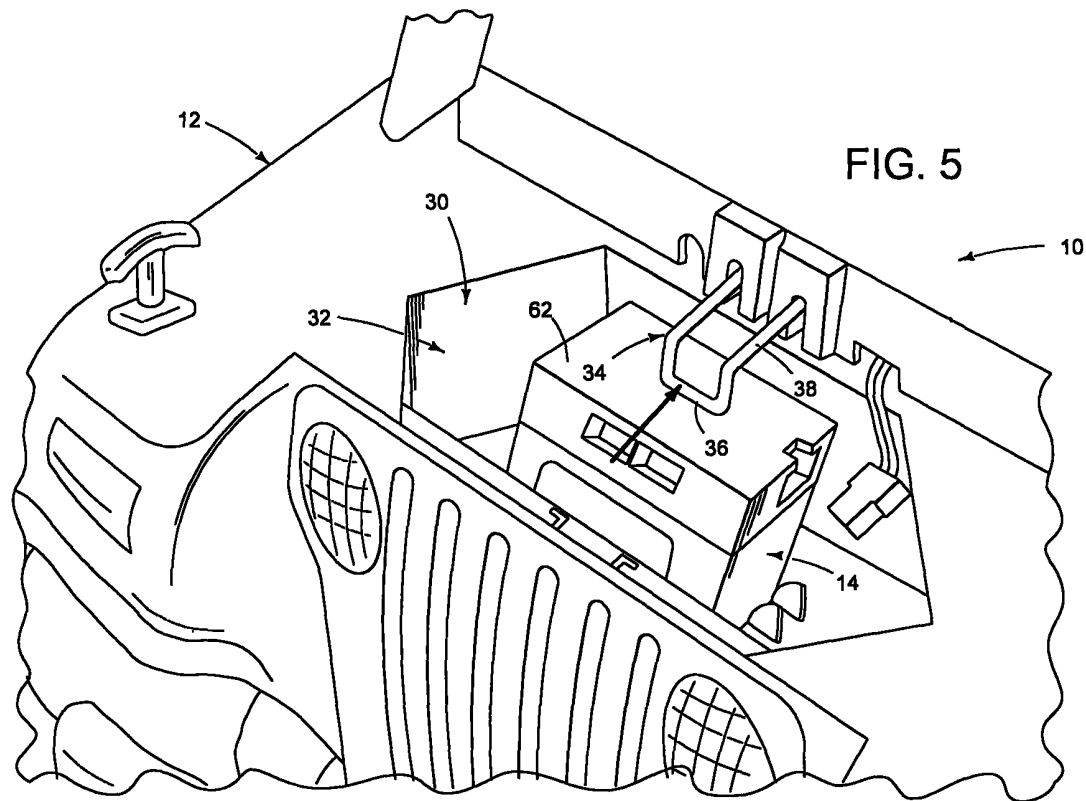


FIG. 5

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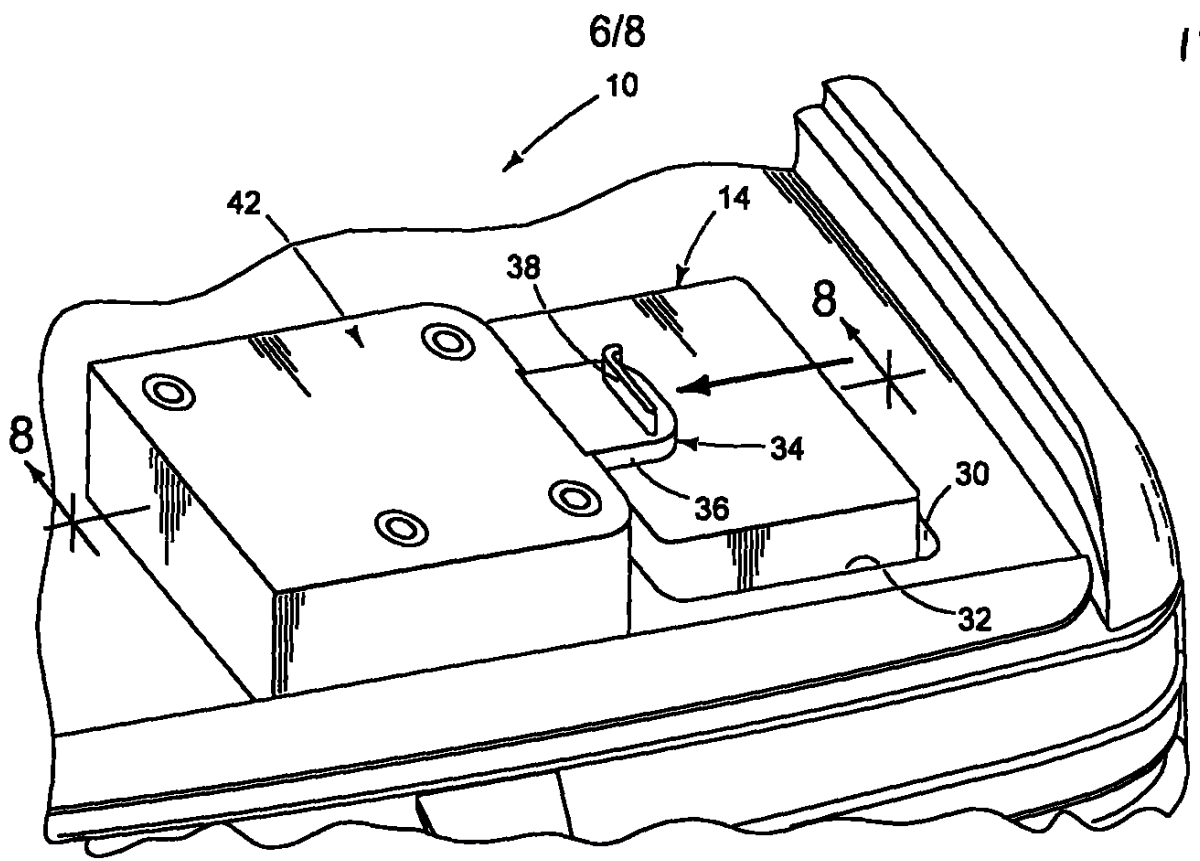


FIG. 6

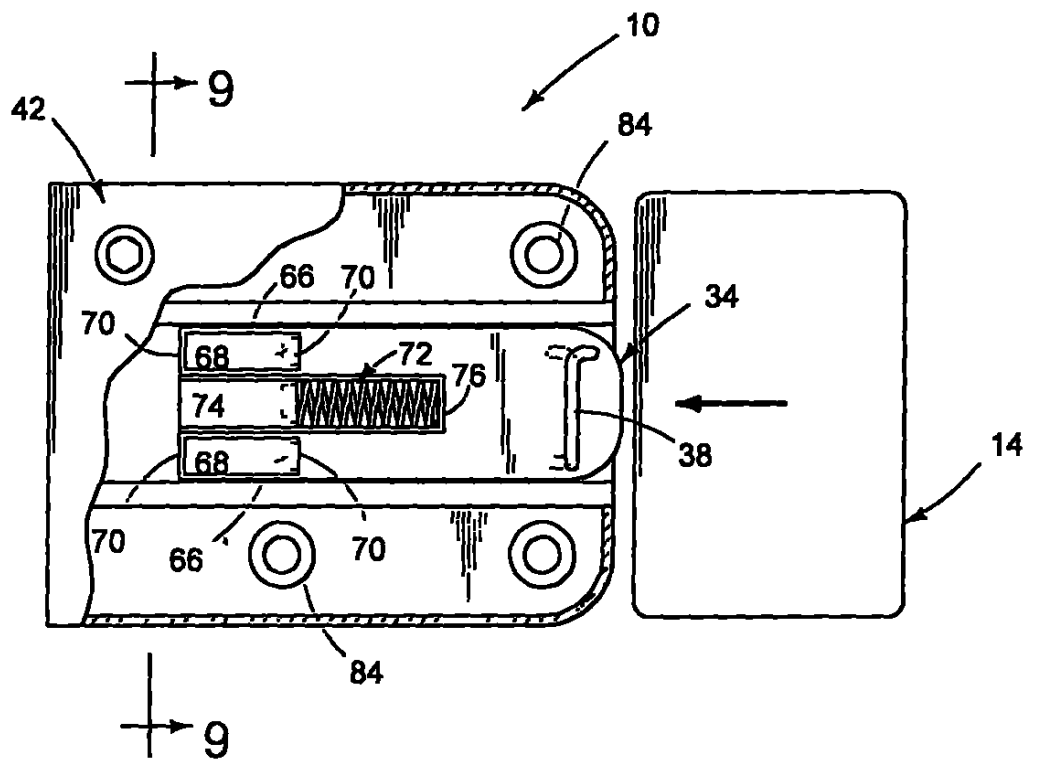


FIG. 7

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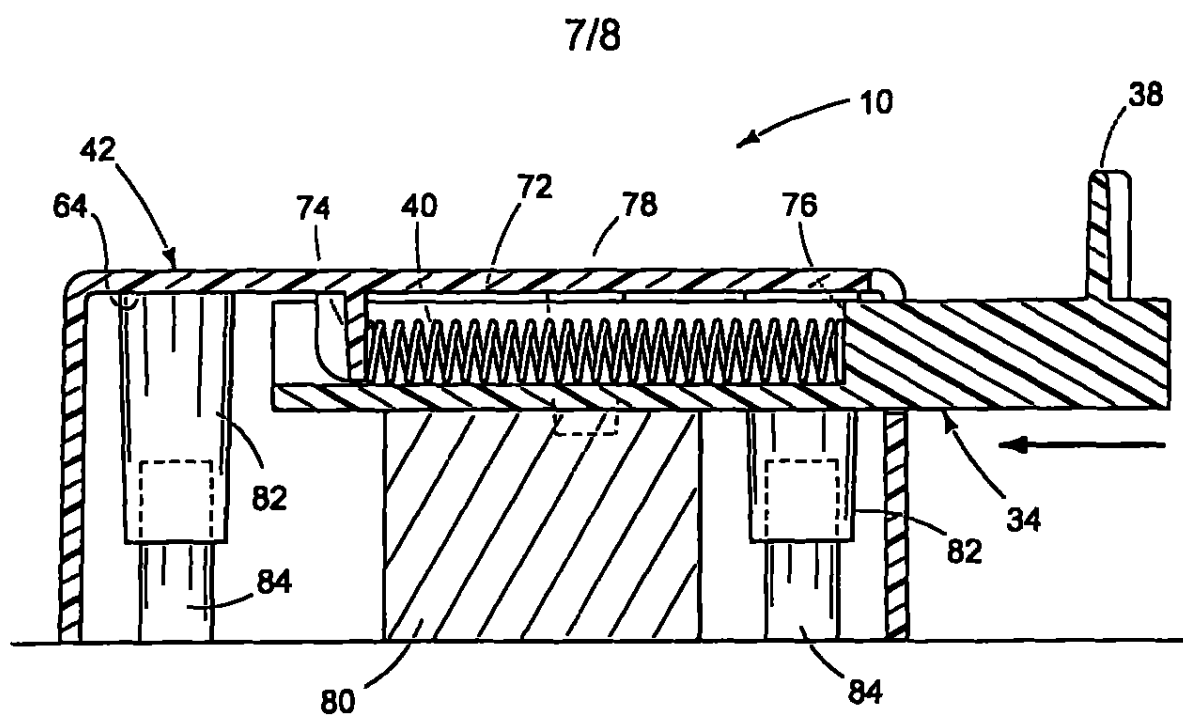


FIG 8

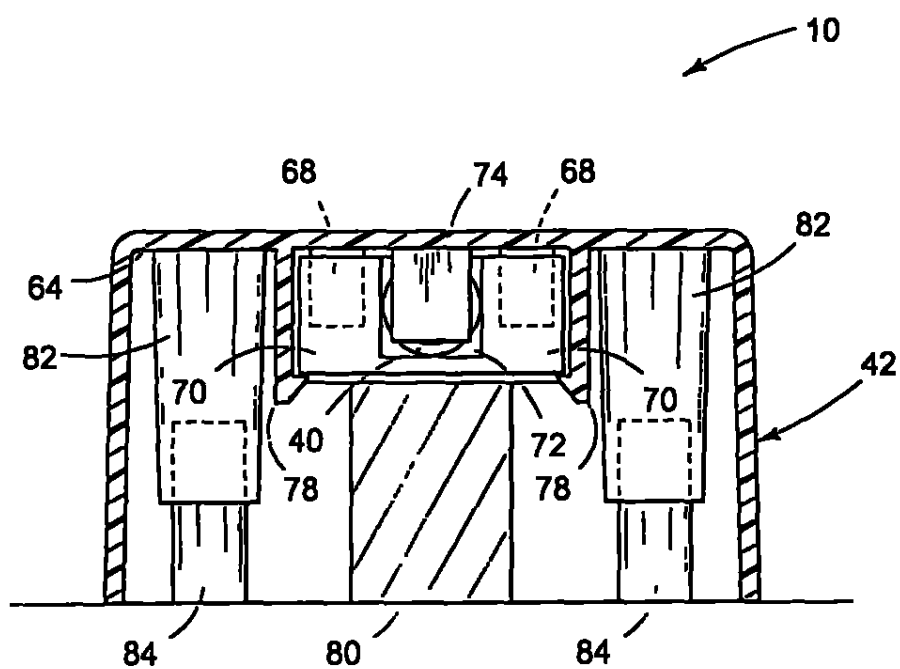


FIG. 9

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FIG 10

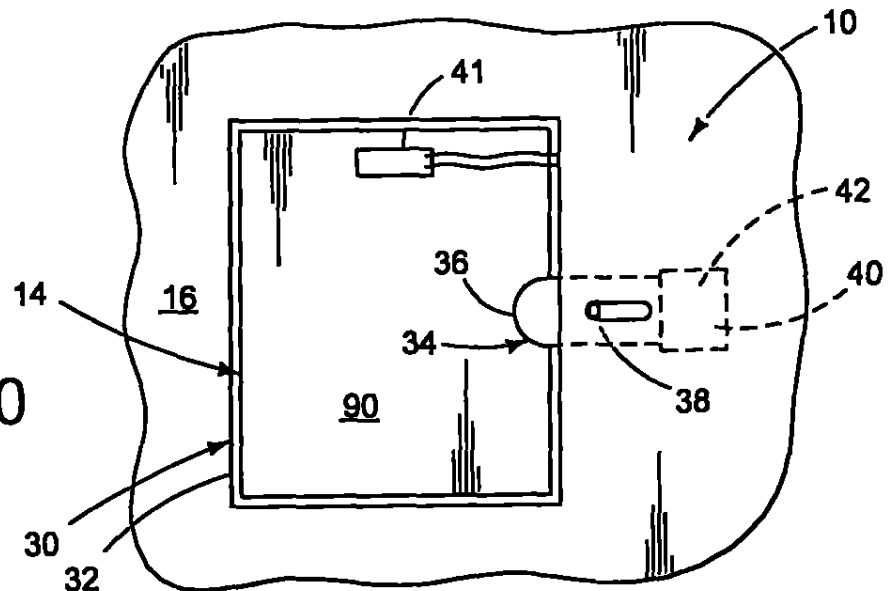


FIG. 11

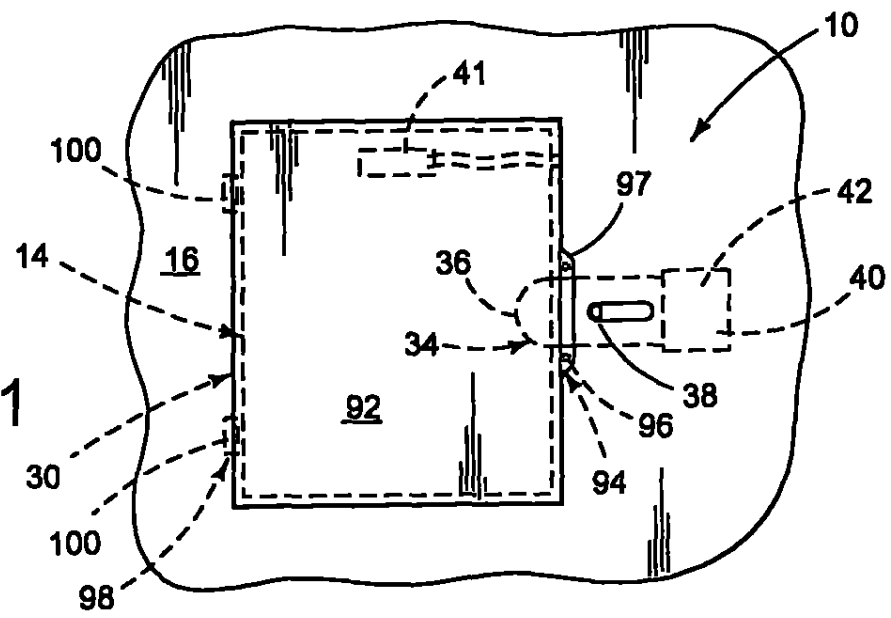
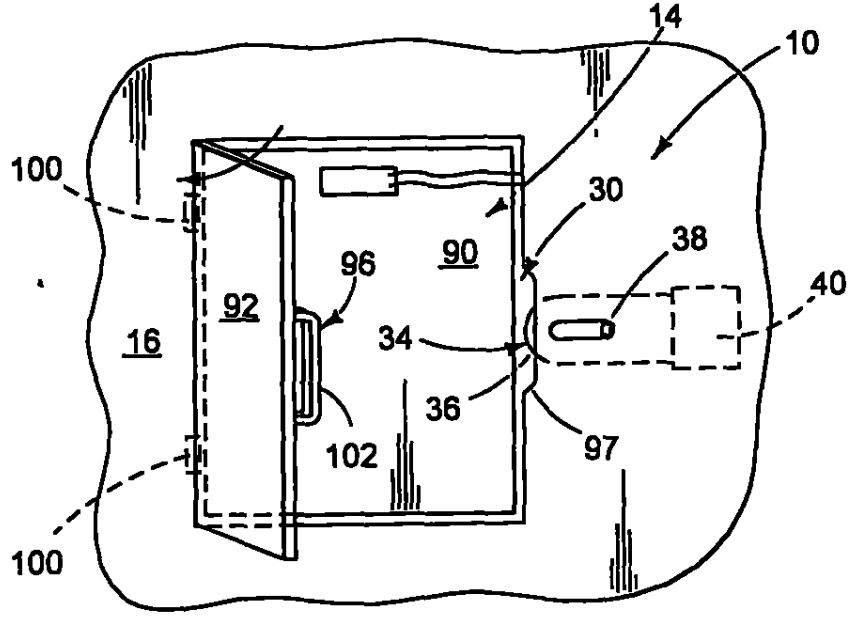


FIG 12



APRIL 15, 2002

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NUMBER OF PAGES 5

BRIEF ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS)

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DOC DATE 11/05/2001

ASSIGNOR

SITARSKI, GERALD P

DOC DATE 11/05/2001

ASSIGNOR

JONES, JOHN L , JR

DOC DATE 11/05/2001

ASSIGNEE

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SERIAL NUMBER 10003593
PATENT NUMBER

FILING DATE 10/31/2001
ISSUE DATE

012586/0596 PAGE 2

KIMBERLY WHITE, EXAMINER
ASSIGNMENT DIVISION
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ASSIGNMENT

WHEREAS, WE, DANIEL M DIGNITTI, of Hamburg, County of Erie, State of New York, GERALD P SITARSKI, of Grand Island, County of Erie, State of New York, and JOHN L JONES, JR., of East Aurora, County of Erie, State of New York, have invented certain improvements in a BATTERY RETAINING SYSTEM FOR CHILDREN'S RIDE-ON VEHICLES, for which an application for Letters Patent of the United States was filed on October 31, 2001, and was given Serial No 10/003,593, and

WHEREAS, MATTEL, INC, a Delaware corporation, having its principal place of business in El Segundo, County of Los Angeles, and State of California, is desirous of acquiring an interest therein,

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which hereby are acknowledged, we, DANIEL M DIGNITTI, GERALD P SITARSKI and JOHN L JONES, JR., have sold, assigned and transferred, and by these presents do sell, assign and transfer unto MATTEL, INC the full and exclusive right to the said invention in the United States and its territorial possessions and in all foreign countries and the entire right, title and interest in and to any and all Letters Patent which may be granted therefor in the United States and its territorial possessions and in any and all foreign countries and in and to any and all related applications, divisionals, reissues, continuations and extensions thereof

We hereby authorize and request the Patent Office officials in the United States and any and all foreign countries to issue any and all of said Letters Patent, when

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granted, to MATTEL, INC , as the assignee of our entire right, title and interest in and to the same, for the sole use of MATTEL, INC , its successors and assigns

Further, we agree that we will communicate to the said MATTEL, INC or its representatives any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all related, divisional, continuation, substitution, renewal and reissue applications, execute all necessary assignment papers to cause any and all of said Letters Patent to be issued to MATTEL, INC , make all rightful oaths and generally do everything possible to aid MATTEL, INC , its successors and assigns, to obtain and enforce proper protection for said invention in the United States and in any and all foreign countries

IN TESTIMONY WHEREOF, I have hereunto set my hand this 5th
day of November, 2001


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Vicki E Hoffman
(Signature)

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107

day of November, 2001

Gerald P. Sitarski
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BRIEF ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS)

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DIGNITTI, DANIEL M

DOC DATE 11/06/2000

ASSIGNOR

SITARSKI, GERALD P

DOC DATE 11/06/2000

ASSIGNEE

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SERIAL NUMBER 09711253
PATENT NUMBER

FILING DATE 11/09/2000
ISSUE DATE

PAULA MCCRAY, EXAMINER
ASSIGNMENT DIVISION
OFFICE OF PUBLIC RECORDS

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109

ASSIGNMENT

WHEREAS, WE, DANIEL M DIGNITTI, of Hamburg, county of Erie, state of New York, and GERALD P SITARSKI, of Grand Island, county of Erie, state of New York, have invented certain improvements in a BATTERY RETAINING SYSTEM FOR CHILDREN'S RIDE-ON VEHICLES, for which for which we have executed an application for Letters Patent of the United States on the date we executed this Assignment as hereinafter set forth, and

WHEREAS, MATTEL, INC , a Delaware corporation, having its principal place of business in El Segundo, County of Los Angeles, and State of California, is desirous of acquiring an interest therein

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which hereby are acknowledged, we, DANIEL M DIGNITTI and GERALD P SITARSKI, have sold, assigned and transferred, and by these presents do sell, assign and transfer unto MATTEL, INC , the full and exclusive right to the said invention in the United States and its territorial possessions and in all foreign countries and the entire right, title and interest in and to any and all Letters Patent which may be granted therefor in the United States and its territorial possessions and in any and all foreign countries and in and to any and all related applications, divisionals, reissues, continuations and extensions thereof

We hereby authorize and request the Patent Office officials in the United States and any and all foreign countries to issue any and all of said Letters Patent, when

granted, to MATTEL, INC , as the assignee of our entire right, title and interest in and to the same, for the sole use of MATTEL, INC , its successors and assigns

Further, we agree that we will communicate to the said MATTEL, INC or its representatives any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all related, divisional, continuation, substitution, renewal and reissue applications, execute all necessary assignment papers to cause any and all of said Letters Patent to be issued to MATTEL, INC , make all rightful oaths and generally do everything possible to aid MATTEL, INC , its successors and assigns, to obtain and enforce proper protection for said invention in the United States and in any and all foreign countries

IN TESTIMONY WHEREOF, I have hereunto set my hand this 6th
day of November, 2000


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Vicki E. Hoffman
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111

day of November, 2000

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GERALD P SITARSKI

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US006508322B2

113
112(12) **United States Patent**
Dignitti et al(10) Patent No **US 6,508,322 B2**
(45) Date of Patent **Jan. 21, 2003**(54) **BATTERY RETAINING SYSTEM FOR CHILDREN'S RIDE-ON VEHICLES**

(75) Inventors: Daniel M Dignitti Hamburg, NY (US); Gerald P Sitarald Grand Island, NY (US); John L. Jones, Jr Aurora, NY (US)

(73) Assignee: Mattel, Inc. El Segundo, CA (US)

(*) Notice: Subject to any disclaimer the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No. 10/003,593

(22) Filed: Oct. 31, 2001

(65) Prior Publication Data

US 2002/0066609 A1 Jun. 6, 2002

Related U.S. Application Data

(63) Continuation-in-part of application No. 09/711,253, filed on Nov. 9, 2000, now Pat. No. 6,347,679

(51) Int. Cl. 7: B60R 16/04

(52) U.S. Cl.: 180/68.5, 180/65.1, 248/500

(58) Field of Search: 180/65.1, 65.6, 180/68.5, 429/96, 97, 98, 99, 100, 248/503, 500, 446/439, 292/173, 40, 162, 163, 280/827, 828, 320/112

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* cited by examiner

Primary Examiner—Brian L. Johnson

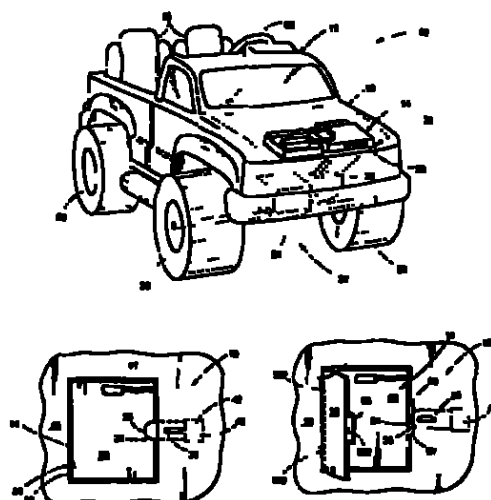
Assistant Examiner—B. Fischmann

(74) Attorney, Agent, or Firm—Kolsch Hartwell P.C.

(57) **ABSTRACT**

A battery retaining system for a children's ride-on vehicle. The system includes a retaining member that is selectively movable between a first or nominal position in which the retaining member blocks removal of a battery assembly from the body of the vehicle, and a second position in which the retaining member does not block removal of the battery assembly. The battery retaining system also includes a biasing member coupled to the retaining member and configured to urge the retaining member from the second position toward the first position. In some embodiments, the battery retaining system is further adapted to retain portions of the vehicle other than the battery assembly.

19 Claims, 8 Drawing Sheets



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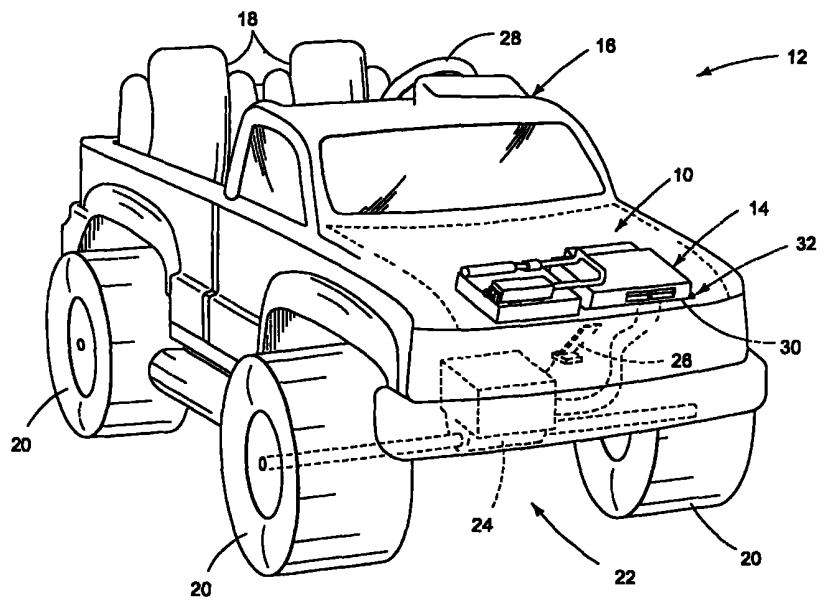
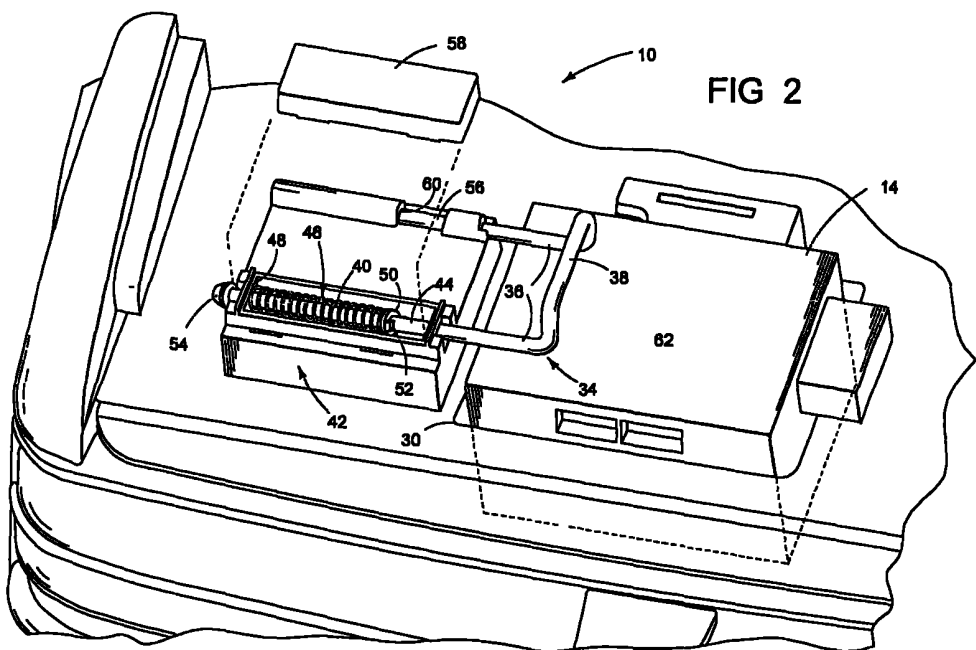
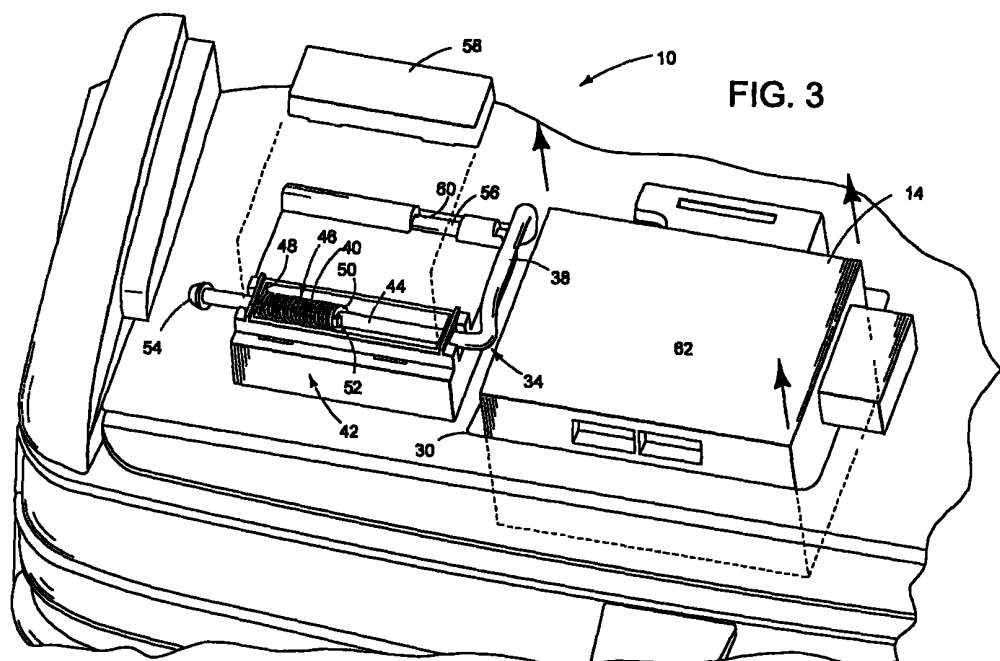


FIG 1

FIG 2





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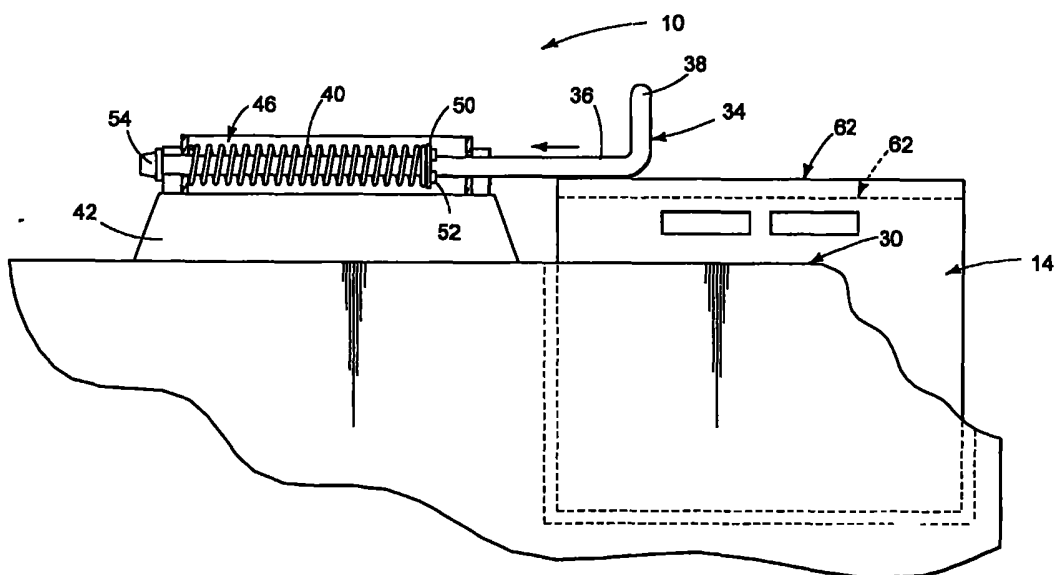
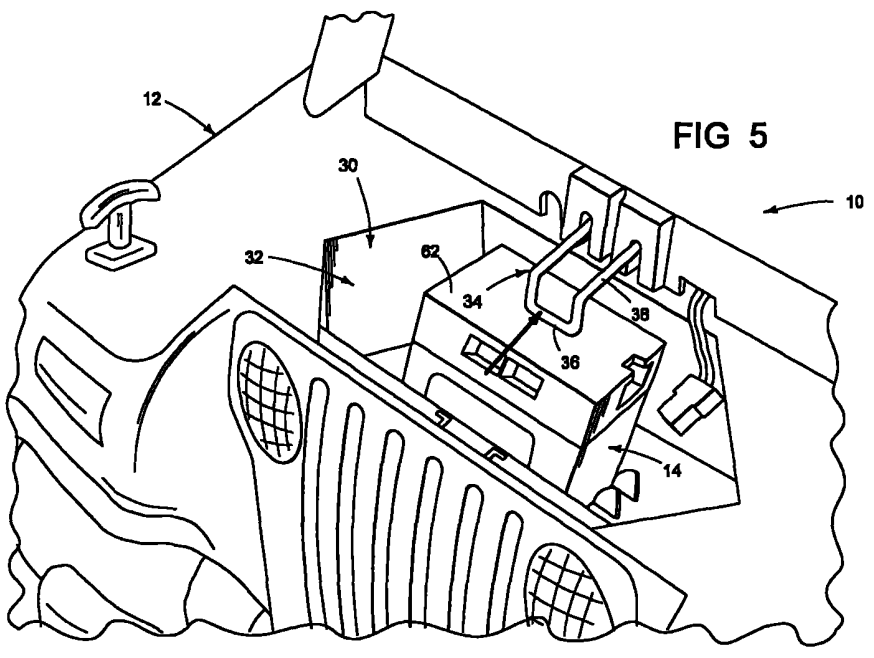


FIG. 4

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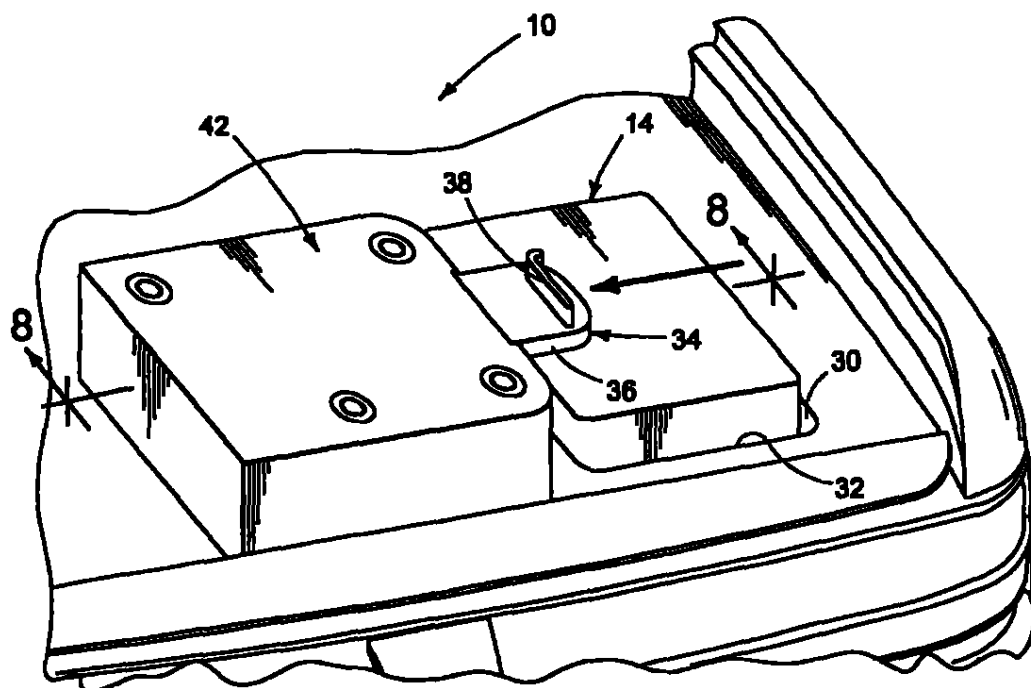


FIG. 6

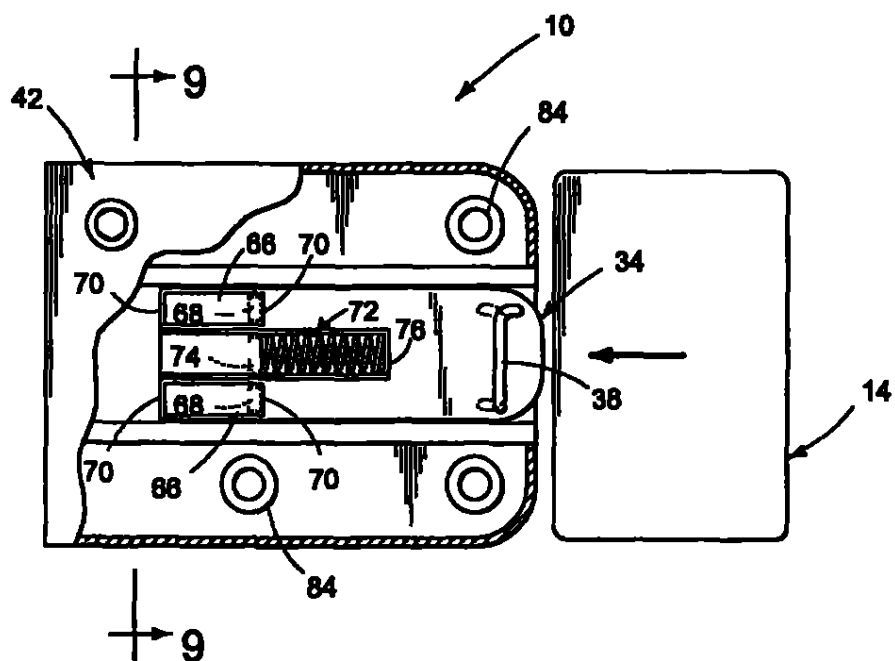


FIG. 7

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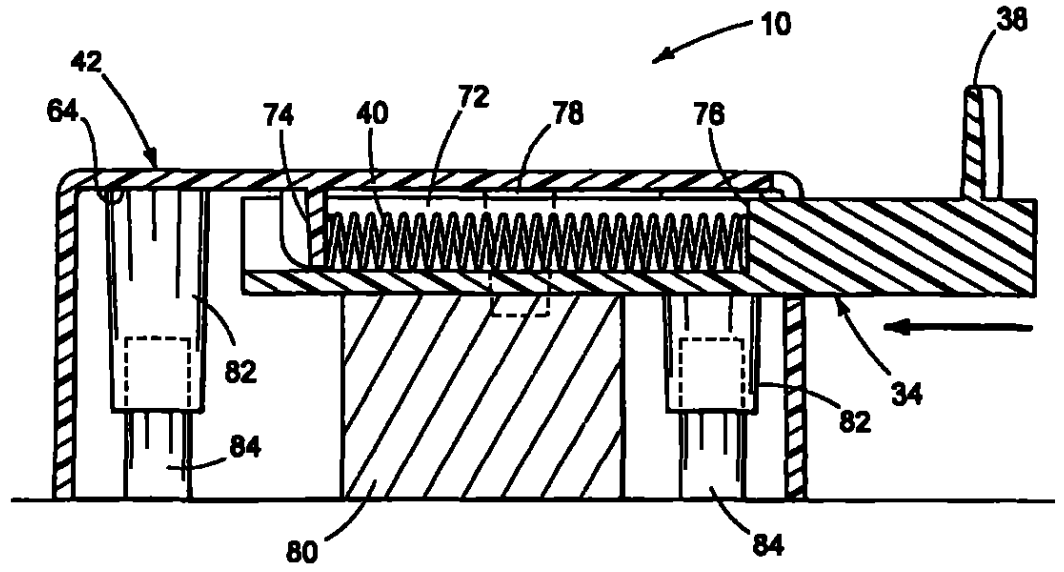


FIG. 8

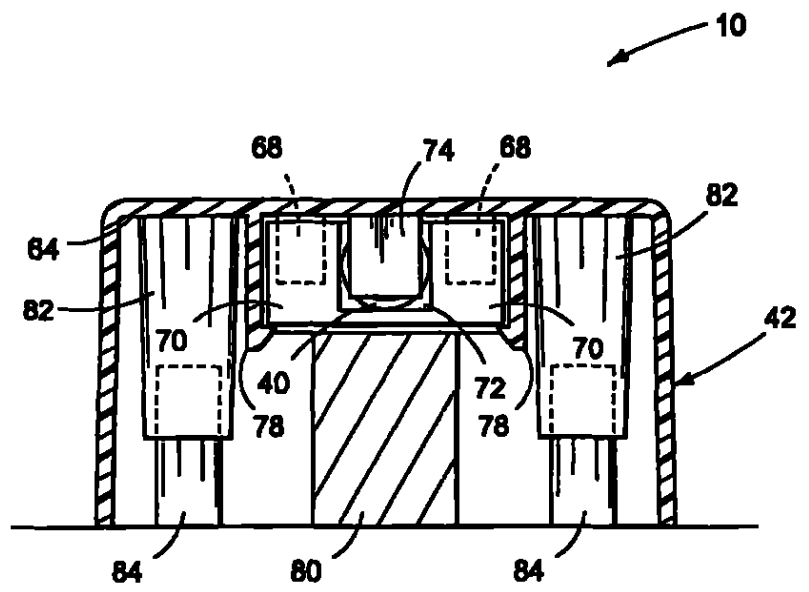


FIG. 9

FIG 10

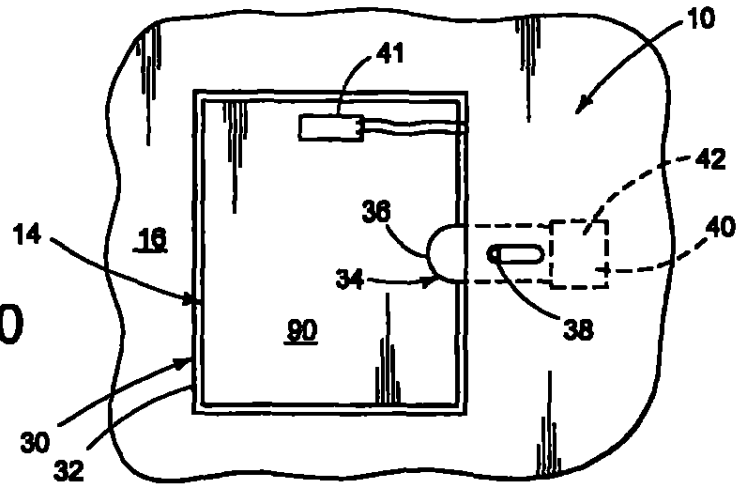


FIG 11

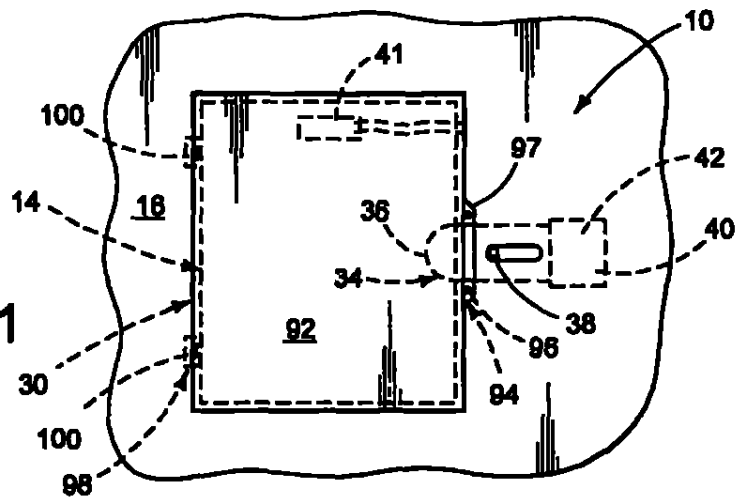
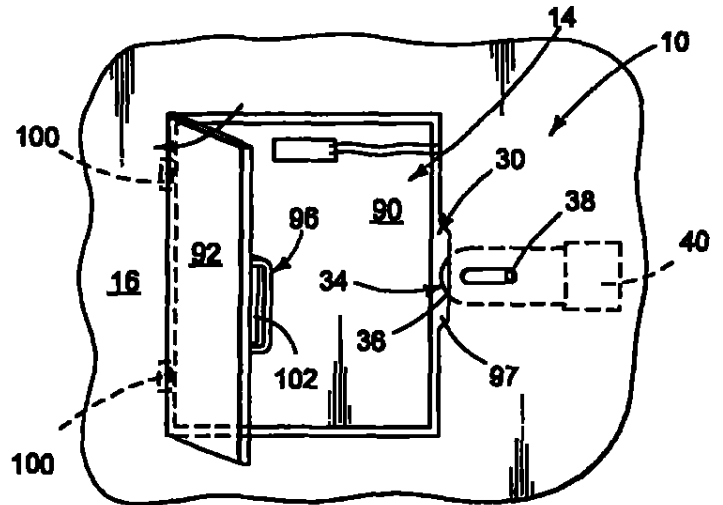


FIG 12



BATTERY RETAINING SYSTEM FOR CHILDREN'S RIDE-ON VEHICLES

RELATED APPLICATION

The present application is a continuation in-part patent application claiming priority to, similarly-entitled U.S. patent application Ser. No. 09/711,253 which was filed on Nov. 9, 2000, issued on Feb. 19, 2002 as U.S. Pat. No. 6,347,679 and the disclosure of which is hereby incorporated by reference.

FIELD OF THE INVENTION

The present invention is directed to children's ride-on vehicles, and more particularly, to a battery retaining system for children's ride-on vehicles.

BACKGROUND

Battery-powered children's ride-on vehicles are popular toys for children. The batteries for these vehicles are usually carried within a compartment on the vehicle. Typically the compartment is easily accessible so that the battery may be removed, such as for replacement or recharging.

To prevent injury or accident, the battery should be securely held within the compartment. If a battery overturns or becomes displaced within the compartment, the battery and/or the vehicle may be damaged. For example, the vehicle typically includes electrical wiring that connects the battery to one or more battery-powered components on the vehicle. An overturned battery may damage or displace the wiring, causing an electrical short or similar hazard. Further, a battery that is not secured within the battery compartment may fall out of the compartment and possibly injure the rider.

One method of securing the battery is to construct a battery compartment that is approximately the same shape and size as the battery. However, the battery may still be unintentionally removed from the compartment, such as if the vehicle tips over. Furthermore, the dimensions of the compartment may limit future battery designs.

Another securing method is to install a battery-retaining device on the vehicle to hold the battery in place by clamping across the battery. However, prior retaining devices have been difficult to use, have required tools to attach or remove, and/or have been prone to becoming dislodged from the battery, thereby allowing the battery to move. Also, because it is removable, the device may be lost or simply not reinstalled because of the time and effort required to reinstall the device.

SUMMARY

The present invention provides a battery retaining system for a children's ride-on vehicle. The battery retaining system includes a retaining member that is selectively movable between a first, or nominal, position in which the retaining member blocks removal of a battery assembly from the body of the vehicle, and a second position in which the retaining member does not block removal of the battery assembly. The battery retaining system also includes a biasing member coupled to the retaining member and configured to urge the retaining member from the second position toward the first position. In some embodiments, the battery retaining system is further adapted to retain portions of the vehicle other than the battery assembly.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic, front isometric view of a children's ride-on vehicle having a battery retaining system in accordance with the present invention.

FIG. 2 is a magnified, fragmentary view of the vehicle of FIG. 1 showing details of the battery retaining system.

FIG. 3 is similar to FIG. 2 but shows the retaining member of the battery retaining system in its second or retracted position.

FIG. 4 is a fragmentary side elevation view of the battery retaining system of FIG. 2.

FIG. 5 is a fragmentary isometric view of a different vehicle having an alternative arrangement of the battery retaining system of FIG. 1.

FIG. 6 is an isometric view of another embodiment of the battery retaining system according to the present invention.

FIG. 7 is a fragmentary top plan view of the battery retaining system of FIG. 6.

FIG. 8 is a cross-sectional view taken generally along the line 8-8 in FIG. 6.

FIG. 9 is a cross-sectional view taken generally along the line 9-9 in FIG. 7.

FIG. 10 is a fragmentary side elevation view of another children's ride-on vehicle with a battery retaining system according to the present invention.

FIG. 11 is a side elevation view of a portion of a children's ride-on vehicle with another battery retaining system according to the present invention that is further adapted to retain a cover portion of the vehicle's body.

FIG. 12 is the fragmentary side elevation view of FIG. 11 with the cover portion released from engagement with the battery retaining system.

DETAILED DESCRIPTION AND BEST MODE OF THE INVENTION

A battery retaining system according to the present invention is indicated generally at 10 in FIG. 1. System 10 is configured for use on a vehicle 12 having a battery assembly 14. The battery assembly is adapted to power one or more battery-powered components of vehicle 12. At least a portion of battery-retaining system 10 is selectively positionable to prevent battery assembly 14 from becoming dislodged during operation of the vehicle.

In the exemplary embodiments described below, vehicle 12 is depicted as a children's ride-on vehicle in the form of a truck. However, it will be appreciated that battery-retaining system 10 may be configured for use on any type of children's ride-on vehicles having one or more battery-powered components. Therefore, the invention is not limited to the particular exemplary embodiments depicted and described herein, but includes all such children's ride-on vehicles. For example, vehicle 12 may take any one of a variety of different reduced-scale forms adapted to simulate real vehicles in reduced scale, including a car, truck, bus, motorcycle, carriage, tractor, construction equipment, etc. Other examples include fantasy vehicles that do not have a full-size or adult-sized counterpart.

Children's ride-on vehicle 12 includes a support frame or body 16 sized and configured to carry a child, or pair of children. Body 16 is typically formed of a plurality of molded rigid plastic parts secured together by screws, nuts, bolts, and similar fasteners. It should be understood that body 16 may be formed of any other suitable materials. Depending on the particular form, body 16 may include one or more seats 18 sized to receive a child.

Vehicle 12 also includes wheels 20 rotatably coupled to body 16, and a drive assembly 22 coupled to drive at least one of the wheels. Any suitable mechanism for drive assembly

bly 22 may be used as is known in the art. While the drive assembly is illustrated in FIG 1 as being coupled to the front wheels it will be appreciated that the drive assembly may be coupled to drive one or both of the rear wheels instead of or in addition to the front wheels. Drive assembly 22 may be directly coupled to the wheels, or may be indirectly coupled through one or more linkages, gears, axles, etc. In the exemplary embodiment, drive assembly 22 includes a battery-powered motor assembly 24 having one or more motors adapted to drive the wheels. Motor assembly 24 may also be configured to power other movable components on vehicle 12 depending on the form of the vehicle. For example, the motor assembly may be coupled to raise and lower the blade of a bulldozer or the bed of a dump truck etc.

In any event, motor assembly 24 is operably connected to battery assembly 14 by suitable connectors such as cables, wires, etc. Vehicle 12 may include one or more control elements such as pedal 26 which are connected to battery assembly 14 and/or motor assembly 24. Pedal 26 is operable by the rider to control the motor assembly and therefore, the operation of the wheels. Typically vehicle 12 includes control elements to enable the rider to control both the speed and direction of the motor assembly. In addition to pedal 26 any other type of control element suitable for use on a children's ride-on vehicle may be used, including buttons, switches, levers, knobs, etc.

Vehicle 12 includes a steering mechanism such as steering wheel 28 coupled to steer at least one of wheels 20. Alternatively, the steering mechanism may take any other form suitable for operation by a child, including handlebars, etc. In the exemplary embodiment, steering wheel 28 is operable by the rider to control the direction of the front wheels, which are also the wheels driven by drive assembly 22. Alternatively the steering mechanism may be configured to steer one or more wheels that are not driven by the drive mechanism.

Battery assembly 14 may be any type of battery assembly suitable for use with a children's ride-on vehicle. Typically battery assembly 14 includes one or more 6-volt and/or 12-volt rechargeable batteries adapted for powering drive assembly 22. Alternatively other types of batteries may be used which have either the same or different voltages. In any event, the battery assembly is usually mounted in a battery storage region of body 16 such as battery compartment 30. It will be appreciated that the battery compartment may take any of a variety of different shapes, sizes and configurations depending on the form of vehicle 12, as well as the size and shape of battery assembly 14. In the exemplary embodiment, battery compartment 30 is formed as a part of body 16 adjacent the front of the vehicle. Alternatively the battery compartment may be disposed at any other desired location on body 16.

Typically battery compartment 30 includes at least one opening 32 through which the battery assembly may be passed into and out of the battery compartment. Exemplary battery compartment 30 has four sidewalls and a bottom wall that are generally sized, shaped and arranged to receive battery assembly 14 and prevent substantial lateral movement of the battery assembly. Opening 32 forms the upper portion of the battery compartment and allows the battery assembly to be lowered into, and raised out of the battery compartment. While the opening extends entirely between each side wall of the exemplary battery compartment to form the upper boundary or "wall" of the battery compartment it will be appreciated that opening 32 may alternatively be smaller in size and may be formed in any one or more walls of the battery compartment.

Battery-retaining system 10 is mounted on vehicle 12 and positioned to selectively maintain battery assembly 14 within battery compartment 30. In the exemplary embodiment depicted in FIG 1 the battery-retaining system is mounted on body 16 adjacent opening 32. Alternatively the battery-retaining system may be mounted at any other location suitable for retaining the battery assembly within the battery compartment.

Turning attention now to FIGS 2-3 battery-retaining system 10 includes a retaining member 34 selectively movable between a first, or nominal position and a second or retracted position. When retaining member 34 is in its nominal position such as shown in FIG 2 it extends over at least a portion of opening 32 to at least partially obstruct the opening. As a result, retaining member 34 blocks removal of the battery assembly when the retaining member is in the nominal position. In the exemplary embodiment depicted in FIG 2, retaining member 34 overlies a portion of the top of battery assembly 14 thereby preventing the battery assembly from moving upward, out of the battery compartment. Similarly if vehicle 12 were to be overturned while retaining member 34 was in the nominal position, the retaining member would prevent the battery assembly from moving laterally or falling out of the battery compartment.

When retaining member 34 is in its retracted position, such as shown in FIG 3, it does not block removal of battery assembly 14 from compartment 30. Thus, battery-retaining system 10 allows passage of the battery through opening 32 when the retaining member is in the retracted position. In the exemplary embodiment, retaining member 34 does not extend over a portion of the opening when the retaining member is in the retracted position. However, it will be appreciated that in some alternative arrangements, retaining member 34 may continue to extend over a portion of the battery compartment when in the retracted position without blocking removal of the battery assembly. An example of such an arrangement is shown in FIG 5 in which the battery compartment is substantially larger than the battery.

Retaining member 34 may take any form suitable for holding battery assembly 14 in place. In the exemplary embodiment depicted in FIG 2 the retaining member is in the form of a generally U-shaped bar or rod. Additionally the retaining member may be constructed out of any suitable material adapted to hold the battery assembly in place including metal (i.e. steel, aluminum, etc.), plastic, composite materials, etc. It will be appreciated that while one specific embodiment of retaining member 34 is depicted in FIGS 2-3, the retaining member may take a wide variety of other forms as desired or beneficial for a particular application. As one example an alternative embodiment of retaining member 34 will be described below.

As mentioned above retaining member 34 is selectively movable between the nominal position and the retracted position by a user. This allows the battery assembly to be quickly and easily installed or removed. Optionally the retaining member may include a retaining portion 36 and a handle portion 38. Retaining portion 36 is adapted to extend adjacent at least a portion of the battery assembly when the retaining member is in the nominal position. Handle portion 38 is adapted to extend away from the opening so that the handle portion is spaced-apart from the battery assembly. This allows a user to easily grip handle portion 38 and move the retaining member as desired.

Battery-retaining system 10 also includes a biasing member 40 configured to urge retaining member 34 toward the nominal position when the retaining member is in the

retracted position. This ensures that the retaining member does not accidentally move to the retracted position when vehicle 12 is in operation. Thus, to install or remove the battery assembly the user grips handle portion 38 and moves the retaining member to the retracted position against the urging of the biasing member. Preferably the biasing member is configured to yield in response to a relatively moderate moving force applied by the user. The user then holds the retaining member in the retracted position while installing or removing the battery assembly. Once the user releases the handle portion, the retaining member automatically moves to the nominal position under the urging of the biasing member.

It will be appreciated that biasing member 40 may take any one or more of a variety of different forms adapted to urge retaining member 34 toward the nominal position. In the exemplary embodiment, biasing member 40 is in the form of a compression spring coupled to the retaining member. Alternatively, spring 40 may be a tension spring, torsion spring, plurality of springs, etc. In any event, spring 40 is coupled to the retaining member so as to be resiliently flexed when the retaining member is moved from the nominal position to the retracted position.

Spring 40 may be coupled to retaining member 34 in any of a variety of different ways. In the exemplary embodiment, battery-retaining system 10 includes a housing 42 mounted on the body adjacent battery compartment 30 and opening 32. Housing 42 is attached to vehicle body 16 by any suitable fasteners such as screws, bolts, clips, etc. Alternatively, the housing may be integrally formed with the body. In any event, one leg 44 of retaining member 34 is slidably received in housing 42. Spring 40 is disposed within the housing and coupled to leg 44 to urge the retaining member toward the nominal position. Housing 42 is formed to define an elongate spring-chamber 46 configured to receive spring 40. Leg 44 of the retaining member passes through apertures at each end of spring-chamber 46. Spring 40 is generally loosely coiled around the leg between a rear wall 48 of the spring-chamber and a washer 50 mounted on leg 44. Washer 50 abuts against a shoulder 52 formed on leg 44.

In the exemplary embodiment, an end cap 54 is mounted on the end of leg 44. End cap 54 is larger than the aperture in rear wall 48, and prevents leg 44 from sliding forward and out of the spring-chamber. End cap 54 is formed as a press-fit connector such as is known to those of skill in the art. As a result, both retaining member 34 and biasing member 40 are coupled to housing 42 and vehicle body 16 and are not removable from the body without disassembling or breaking the battery retaining system or separating the housing from the body. Thus, in contrast to prior systems that use a detachable retaining member, battery retaining system 10 is easier to use since it is never removed from the vehicle. Furthermore, system 10 is less susceptible to failure due to lost or damaged parts.

As can be seen in FIG. 3, spring 40 is compressed between washer 50 and back wall 48 when the retaining member is moved to the retracted position. Thus, the spring imparts an urging force on the washer and thereby the retaining member as a result of the potential energy stored in the spring. Typically the spring is somewhat compressed even when the retaining member is in the nominal position so that at least some urging force is imparted to the retaining member to hold it in the nominal position. Optionally a selectively removable cover 58 may be provided to enclose the spring-chamber and spring to prevent debris from entering the spring-chamber and to protect a child from being accidentally pinched by the spring.

In the exemplary embodiment depicted in FIGS. 2 and 3, the other leg 56 of U-shaped retaining member 34 is slidably received in a molded channel 60 defined by housing 42. Although leg 56 is depicted as being shorter than leg 44, it will be appreciated that the length of leg 56 may alternatively be equal to, or greater than, the length of leg 44. It can be seen that spring-chamber 46 and channel 60 form substantially parallel tracks that guide the movement of legs 44 and 56, respectively. As a result, the retaining member is constrained to move or slide in at least substantially a single direction aligned with spring-chamber 46 and channel 60, toward and away from opening 32. Alternatively, the spring chamber and channel may be configured to guide the movement of the retaining member in other ways.

Turning attention now to FIG. 4, it can be seen that retaining member 34 is disposed to slide in a direction generally parallel with the top side 62 of battery assembly 14. It will be appreciated that retaining system 10 may be configured relative to the height of battery assembly 14 so that retaining portion 36 rests in contact with top side 62 when the retaining member is in the nominal position. Alternatively, the retaining portion may extend above top side 62 without contacting the battery assembly. This latter configuration is shown in FIG. 4 by the battery assembly which has a top side indicated in dash lines.

Regardless of whether the retaining portion contacts the top of battery assembly 14, it will be appreciated that the urging force imparted to the retaining member by spring 40 is along a direction parallel with top side 62. Thus, in contrast to prior art systems, retaining member 34 is configured not to transfer the urging force of the spring onto the battery assembly. This relieves the battery assembly of a source of long-term pressure that may damage the battery assembly. Alternatively, the battery retaining system may be configured to transfer some or all of the urging force to the battery.

It will be appreciated that battery retaining system 10 may be arranged in a variety of different ways depending on the particular configuration of vehicle 12, battery compartment 30, and battery assembly 14. For example, FIG. 5 illustrates an alternative arrangement in which retaining member 34 is oriented so that the end regions of the U-shaped member extend spaced apart from the battery assembly while the central region extends downward toward the top of the battery assembly. In contrast to the embodiment depicted in FIGS. 2-4, therefore, the central region of the retaining member forms retaining portion 36, while the end regions form handle portion 38. Nevertheless, retaining member 34 is selectively slidable away from opening 32 to allow passage of battery assembly 14 into or out of battery compartment 30. A biasing member such as described above urges the retaining member from a retracted position away from opening 32 to a nominal position obstructing the opening.

As also shown in FIG. 5, exemplary battery assembly 14 includes a socket 39 adapted to engage a plug and cable assembly 41. Assembly 41 is coupled to motor assembly 24 (not shown) to carry electrical power from the battery assembly to the motor assembly. Alternatively, vehicle 12 may include other mechanisms for conducting electrical power from the battery assembly to the motor assembly. The arrangement illustrated in FIG. 5 also includes a battery compartment 30 that is substantially larger than battery assembly 14. Thus, the sidewalls of the battery compartment may not sufficiently support the battery assembly against lateral movement within the compartment. Instead, the exemplary battery compartment of FIG. 5 includes one or

more mounts 43 positioned to extend adjacent one or more sides of the battery assembly and prevent lateral movement of the battery assembly within the battery compartment.

Turning attention now to FIGS 6-9 an alternative embodiment of battery retaining system 10 is shown. Retaining member 34 is in the form of a generally rectangular bar slidably received in housing 42. Alternatively retaining member 34 may be formed to have any other suitable shape as desired. In the depicted embodiment, retaining member 34 is formed as a molded plastic structure but may alternatively be formed in other ways and/or from other materials. In any event, the retaining member includes a retaining portion 36 which extends generally parallel to the top side of battery assembly 14.

In its nominal position shown in FIG 6 retaining portion 36 extends toward battery compartment 30 to at least partially obstruct opening 32 and block installation or removal of the battery assembly. The retaining member is depicted as overlying a generally central portion of the battery assembly to better obstruct the opening. However it will be appreciated that the retaining member may alternatively be configured to overlie other portions of the battery assembly. The relatively wide and flat shape of the retaining portion also provides stable support to the battery assembly in the event the vehicle is overturned. Handle portion 38 is configured to be gripped by a user to move the retaining member to a retracted position within the housing. The handle portion may be formed in a variety of alternative shapes suitable for gripping. An example of an alternative shape is indicated in dash lines in FIG 7.

Retaining member 34 is received through an aperture in housing 42 and extends generally parallel to an upper inner surface 64 of the housing. The rear portion of the retaining member includes a pair of elongate guide slots 66 adapted to receive guide members 68. The guide members extend downward from upper inner surface 64 and into guide slots 66. Members 68 are slidable within slots 66 to substantially constrain the movement of retaining member 34 to a single direction. Each guide slot includes opposing end walls 70 which limit the length of travel of the retaining member thereby preventing the retaining member from sliding out of housing 42.

Alternative retaining member 34 is also formed to define a spring chamber 72 between guide slots 66. Spring chamber 72 is adapted to receive a spring 40 or other suitable biasing member. The spring is enclosed within chamber 72 by upper inner surface 64. A bulkhead 74 extends downward from the upper inner surface into spring chamber 72. Spring 40 is positioned between bulkhead 74 and the front wall 76 of the spring chamber. When the retaining member is moved toward its retracted position as shown in FIG 7 front wall 76 moves toward bulkhead 74, thereby compressing spring 40. As a result, the spring urges the retaining member back toward its nominal position.

Retaining member 34 is held adjacent upper inner surface 64 by one or more clips 78 which extend downward from the upper inner surface along the sides of the retaining member. Each clip includes an inwardly projecting lip that slidably supports the underside of the retaining member. The retaining member is also held adjacent the upper inner surface of housing 42 by a base member 80. The housing is mounted to body 16 above base member 80 which extends upward from the body to a position beneath retaining member 34 and prevents the retaining member from moving away from upper inner surface 64. Alternatively the retaining member may be held adjacent the upper inner surface of the housing by other mechanisms.

In the alternative embodiment depicted in FIGS 6-9 housing 42 includes a plurality of mounting sleeves 82. The mounting sleeves are adapted to fit over posts 84. Each sleeve 82 is adapted to receive a screw or similar fastener (not shown), which extends into and engages threaded bores (not shown) in posts 84. Thus, retaining member 34 and biasing member 40 cannot be removed from the body without disassembling or breaking the retaining system. Alternatively the housing may be mounted on body 16 in other ways known to those of skill in the art.

As described above battery retaining system 10 provides a reliable system for preventing a vehicle battery assembly from becoming dislodged during operation of the vehicle. Furthermore system 10 is configured to allow the battery assembly to be installed or removed easily and without the use of tools. While various alternative embodiments and arrangements of battery retaining system 10 have been shown and described above, it will be appreciated by those of skill in the art that numerous other embodiments, arrangements, and modifications are possible and therefore within the scope of the invention. For example it should be understood that battery retaining systems according to the present invention may be configured to engage any of the sides of the battery assembly. To provide an illustrative example of this point, FIG 10 illustrates a battery assembly 14 that is adapted to be inserted side-first into the battery compartment 30 of the body 16 of a ride-on vehicle. In such a configuration retaining portion 36 extends at least partially across opening 32 to engage or be in a position to engage a sidewall 90 of the battery assembly.

Battery retaining systems 10 according to the present invention may also be used to retain elements of the vehicle other than battery assembly 14. An example of such a configuration is shown in FIG 11 in which system 10 is adapted to retain a cover portion 92 of the vehicle's body 16 over opening 32 of battery compartment 30. Portion 92 may also be described as a cover or door for compartment 30. It is often desirable to have such a cover or door so that the battery assembly (associated plug and cable assembly 41) is shielded from contact by external elements, including the rider when the cover is in place. Cover 92 may at least partially if not substantially or completely cover (or enclose) the opening of the battery compartment. It is also within the scope of the invention that the cover may form another portion of the vehicle's body such as at least a portion of the vehicle's seat.

By way of background conventional covers are removably attached to the body via mechanical fasteners, such as screws, that must be released to permit access to the battery compartment, and then reinstalled to resecure the cover in its closed position. These fasteners are typically separable from the cover and as such are often removed from the cover because of the time and/or tools required to remove and resecure the fasteners. As a result conventional covers are often left unsecured to the vehicle's body or removed from the vehicle.

The battery retaining system shown in FIG 11 also illustrates that at least a portion of the system may be housed within or beneath the body 16 of the vehicle with handle portion 38 being accessible from external the body so that a user may selectively configure the system between its nominal and retracted positions. For example, handle portion 38 may be accessible through a slot or other opening in the body and/or may extend at least partially through the opening.

In the embodiment shown in FIG 11 the cover includes an engagement structure 94 such as catch 96, which is

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adapted to be selectively engaged by retaining portion 36 to selectively retain the cover in its closed position. When the battery retaining system is urged to its retracted position such as shown in FIG 12 the retaining portion not only is sufficiently withdrawn from opening 32 so that the battery assembly may be removed from the battery compartment but also releases the engagement structure so that the cover portion may be moved to an open position that permits access to battery assembly 14. As discussed, the retaining system is biased to return toward its nominal position by a biasing member such as the previously described member 40. In FIG 11 the cover portion is shown including mounts 98 such as hinges 100, which enable the cover to pivot relative to the body. It is also within the scope of the invention that cover portion 92 may be formed without mounts 98 in which case, the cover portion would be configured to be completely removed from the body upon release of engagement structure 94 by retaining portion 36.

In the illustrative embodiment shown in FIG 12 it can be seen that battery compartment 30 includes a passage 97 into which engagement structure 94 may extend when the cover portion is in its closed position. It is within the scope of the invention that passage 97 may be part of the battery compartment as shown in FIG 12, or that the passage may be separated from the battery compartment by another portion of the body. In FIG 12 it can be seen that catch 96 includes an opening, or passage 102 into which retaining portion 36 may at least partially extend to permit the unintentional removal of cover portion 92 from its closed position. As shown in FIG 12 catch 96 may be configured so that the urging, or biasing, force imparted to the retaining member is not transferred to the battery cover. It is within the scope of the invention that engagement structure 94 may have any suitable configuration adapted to be selectively engaged by retaining portion 36 to selectively retain the cover portion in its closed position. Accordingly it should be understood that the projecting catch shown in FIGS 11 and 12 is but an illustrative example of a suitable engagement structure.

It is believed that the disclosure set forth above encompasses multiple distinct inventions with independent utility. While each of these inventions has been disclosed in its preferred form, the specific embodiments thereof as disclosed and illustrated herein are not to be considered in a limiting sense as numerous variations are possible. The subject matter of the inventions includes all novel and non-obvious combinations and subcombinations of the various elements, features, functions and/or properties disclosed herein. Where the claims recite "a" or "a first" element or the equivalent thereof such claims should be understood to include incorporation of one or more such elements, neither requiring nor excluding two or more such elements.

It is believed that the following claims particularly point out certain combinations and subcombinations that are directed to one of the disclosed inventions and are novel and non-obvious. Inventions embodied in other combinations and subcombinations of features, functions, elements and/or properties may be claimed through amendment of the present claims or presentation of new claims in this or a related application. Such amended or new claims, whether they are directed to a different invention or directed to the same invention, whether different broader narrower or equal in scope to the original claims, are also regarded as included within the subject matter of the inventions of the present disclosure.

We claim

- 1 A children's ride-on vehicle comprising:
a vehicle body having a seat adapted to carry a child and including a battery compartment with an opening,
a plurality of wheels coupled to the body;
a drive assembly adapted to drive at least one of the wheels, the drive assembly including a motor assembly having at least one battery-powered motor;
a battery assembly disposed within the battery compartment and operably connected to the motor assembly;
a battery cover adapted to at least partially obstruct the opening; and
a battery retainer assembly mounted on the body wherein the battery retainer assembly comprises:
a retaining member selectively movable between a first position in which the retaining member is positioned to retain the battery cover in a first cover position, in which the battery cover is positioned to obstruct removal of the battery assembly from the battery compartment and a second position in which the battery cover may be sufficiently removed from the opening to a second cover position in which the battery assembly may be removed from the battery compartment through the opening, and
a biasing member coupled to the retaining member and configured to urge the retaining member from the second position toward the first position.
- 2 The vehicle of claim 1 wherein the retaining member at least partially obstructs the opening when in the first position.
- 3 The vehicle of claim 1 wherein the battery cover is pivotally coupled to the body.
- 4 The vehicle of claim 1 wherein the biasing member is configured to impart an urging force on the retaining member to urge the retaining member toward the first position and where the retaining member is configured not to transfer the urging force to the battery cover.
- 5 The vehicle of claim 1 wherein the retaining member is configured not to contact the battery assembly when the battery assembly is in the battery compartment and the retaining member is in the first position.
- 6 The vehicle of claim 1 wherein the retaining member is slidably coupled to the body for movement substantially constrained to a single direction relative to the body.
- 7 The vehicle of claim 1 wherein the battery cover includes a catch, and further wherein the retaining member is adapted to engage the catch when the battery compartment is in the first cover position and the retaining member is in the first position.
- 8 The vehicle of claim 7 wherein the catch defines a passage into which the retaining member at least partially extends when the cover is in the first cover position and the retaining member is in the first position.
- 9 The vehicle of claim 1 wherein the battery cover is adapted to completely cover the opening when in the first cover position.
- 10 The vehicle of claim 1 wherein the retaining member includes a retaining portion adapted to extend adjacent at least a portion of the battery assembly when the retaining member is in the first position and a handle portion spaced apart from the battery assembly and adapted to be gripped by a rider to move the retaining member from the first position to the second position against the urging of the biasing member.
- 11 The vehicle of claim 10, wherein the body includes a slot through which the handle portion is accessible from external the vehicle's body.

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12 The vehicle of claim 11 wherein the handle portion at least partially extends through the slot.

13 The vehicle of claim 1 wherein the retaining member is coupled to the body and constrained to slide along a single plane between the first and the second positions.

14 The vehicle of claim 13, wherein the plane extends generally parallel to a side of the battery assembly when the battery assembly is in the battery compartment.

15 The vehicle of claim 14, wherein the plane further extends generally parallel to the battery cover when the battery cover is in the first cover position.

16 The vehicle of claim 1 wherein the retaining member is configured not to directly engage the battery assembly when the battery assembly is positioned within the battery compartment and the retaining member is in the first position.

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17 The vehicle of claim 1 wherein the battery retainer assembly includes a housing mounted on the body and adapted to slidably receive at least a portion of the retaining member and where the biasing member includes a spring disposed within the housing.

18 The vehicle of claim 1 wherein the battery compartment is sized to at least substantially correspond to the size of the battery assembly.

19 The vehicle of claim 18, wherein the battery compartment includes a passage into which the catch at least partially extends when the battery cover is in the first cover position.

* * * * *



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(12) **United States Patent**
Dignitti et al.

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(45) Date of Patent **Feb 19, 2002**

(54) **BATTERY RETAINING SYSTEM FOR CHILDREN'S RIDE-ON VEHICLES**

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(*) Notice: Subject to any disclaimer the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(57) ABSTRACT

A battery retaining system for a children's ride-on vehicle. The system includes a retaining member that is selectively movable between a first or nominal position in which the retaining member blocks removal of a battery assembly from the body of the vehicle, and a second position in which the retaining member does not block removal of the battery assembly. The battery retaining system also includes a biasing member coupled to the retaining member and configured to urge the retaining member from the second position toward the first position.

23 Claims, 7 Drawing Sheets

(21) Appl. No. 09/711,253

(22) Filed Nov 9, 2000

(51) Int. Cl. ⁷ B60R 16/04

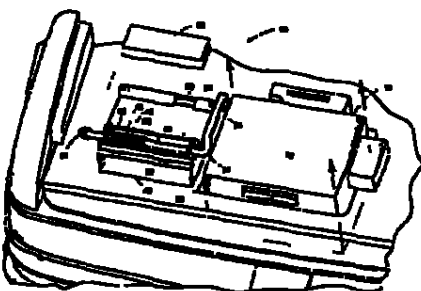
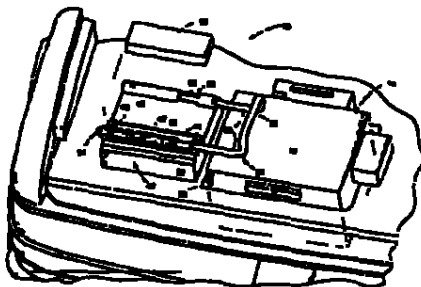
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(58) Field of Search 180/65 6 429/96, 97 98, 99 100; 248/500, 503 505 510 292/162, 175 105/51

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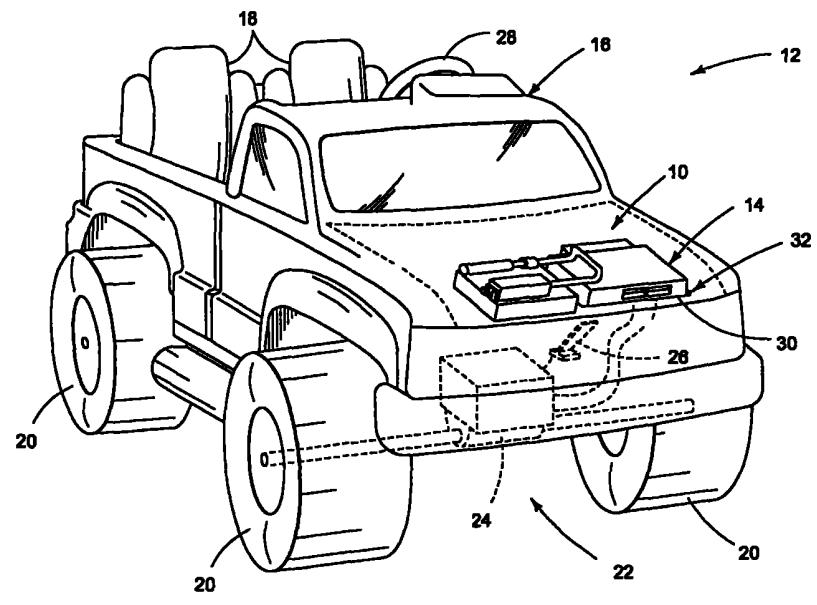
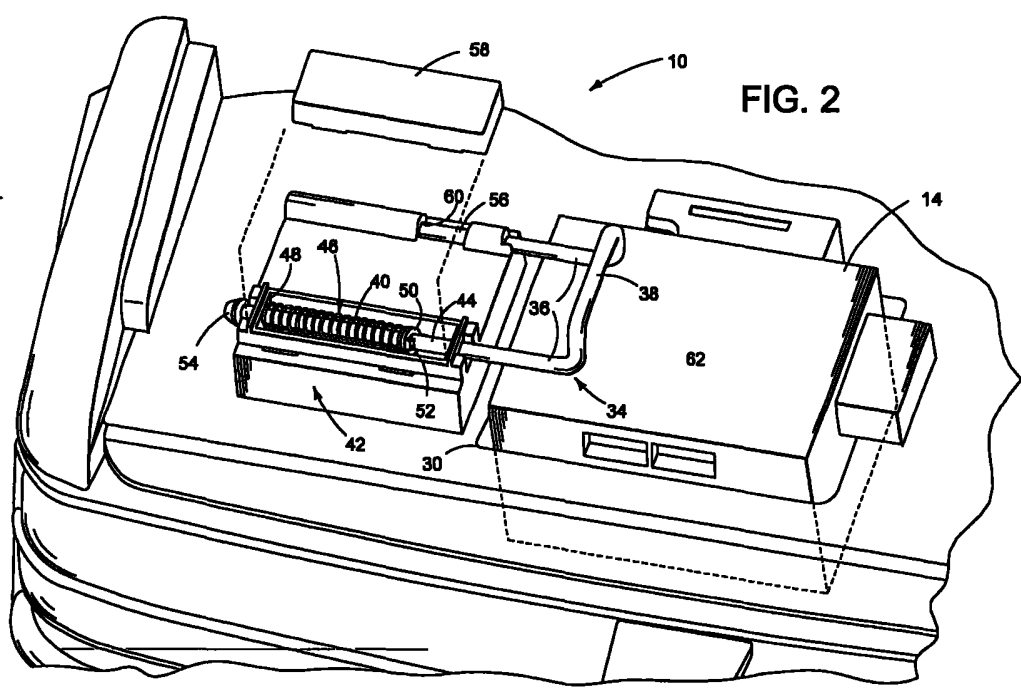
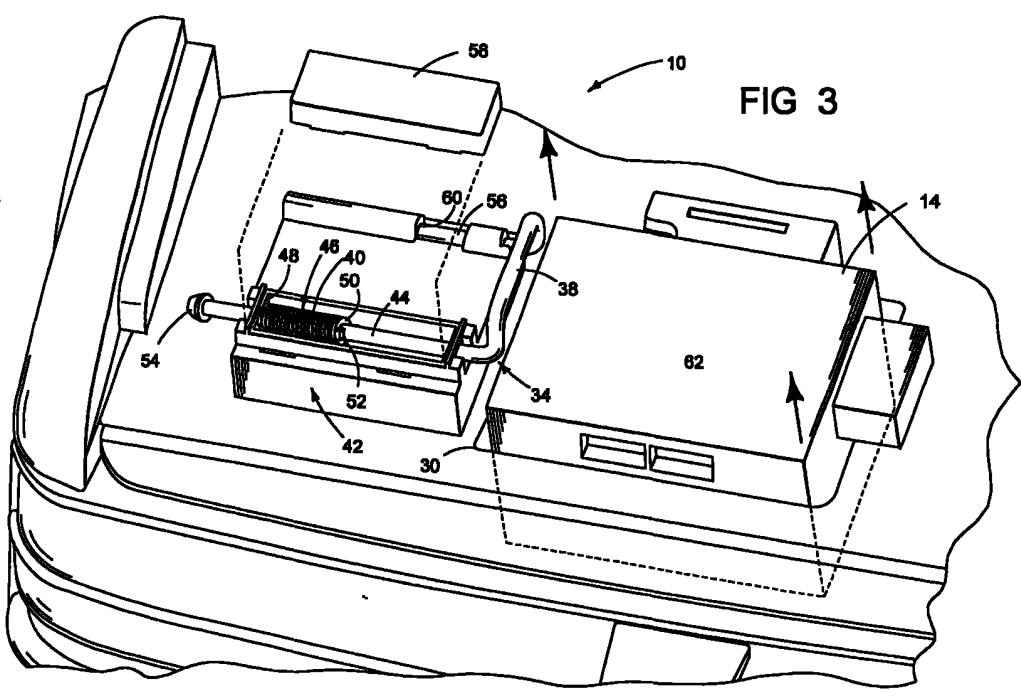


FIG. 1





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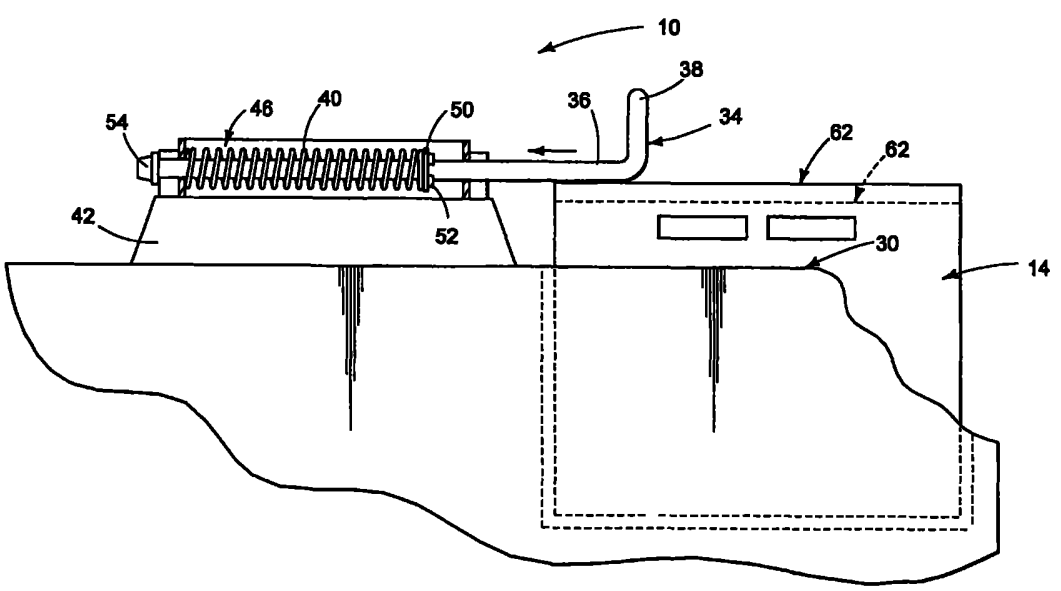
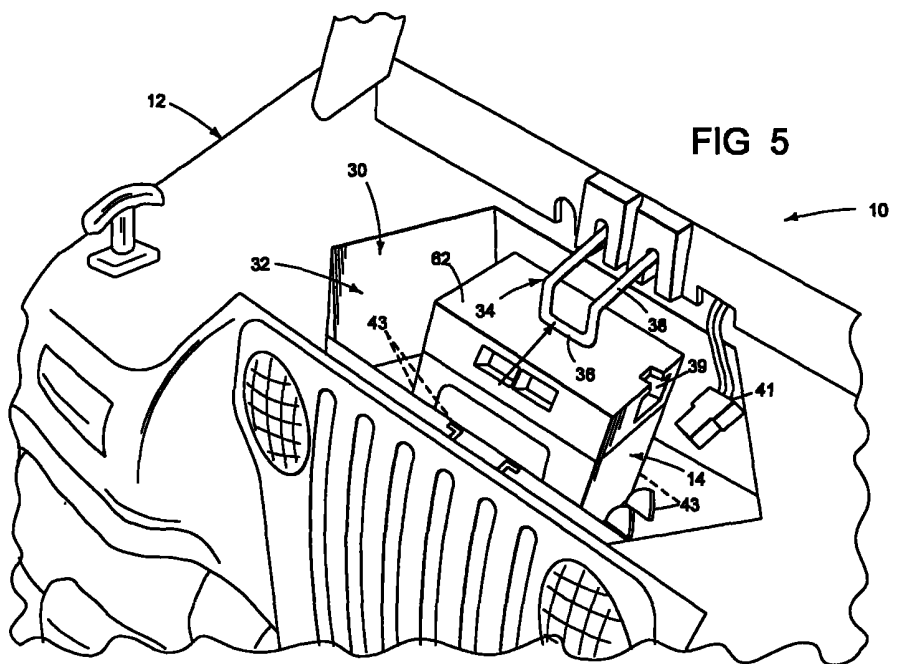


FIG. 4

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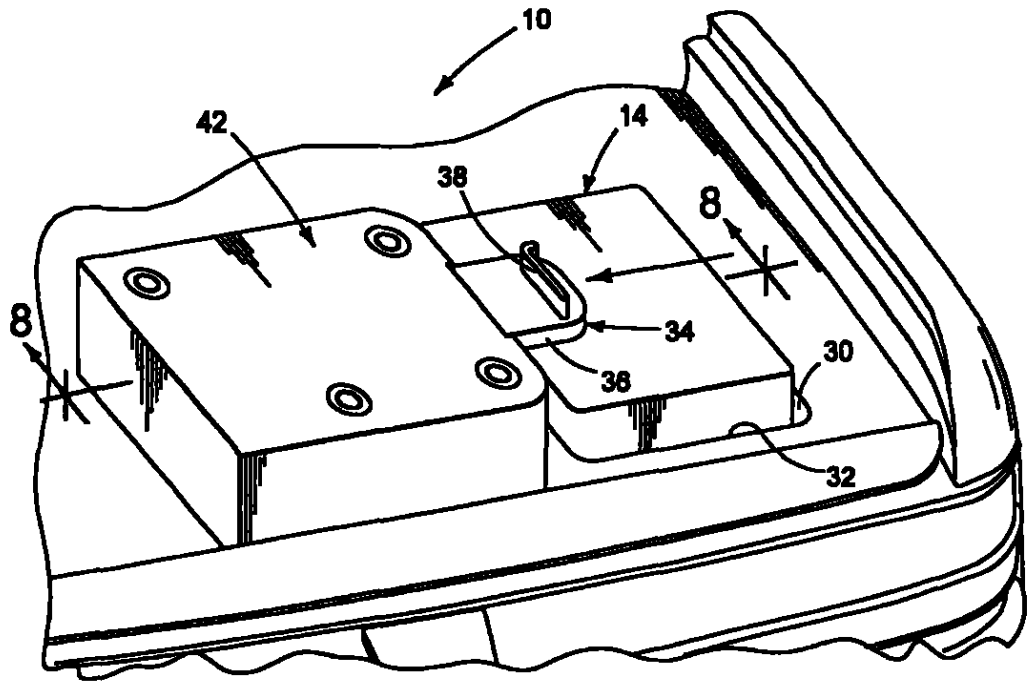


FIG 6

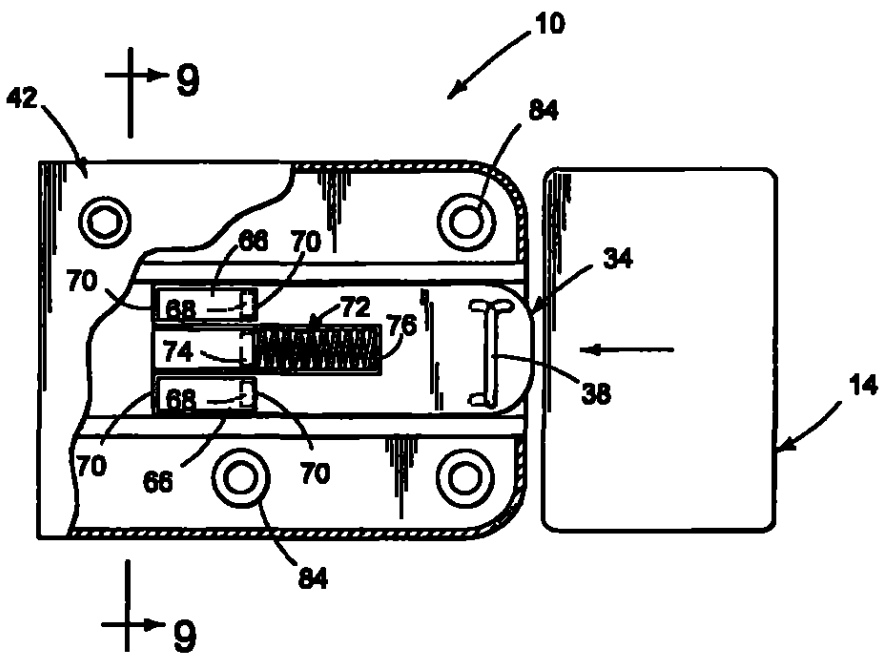


FIG 7

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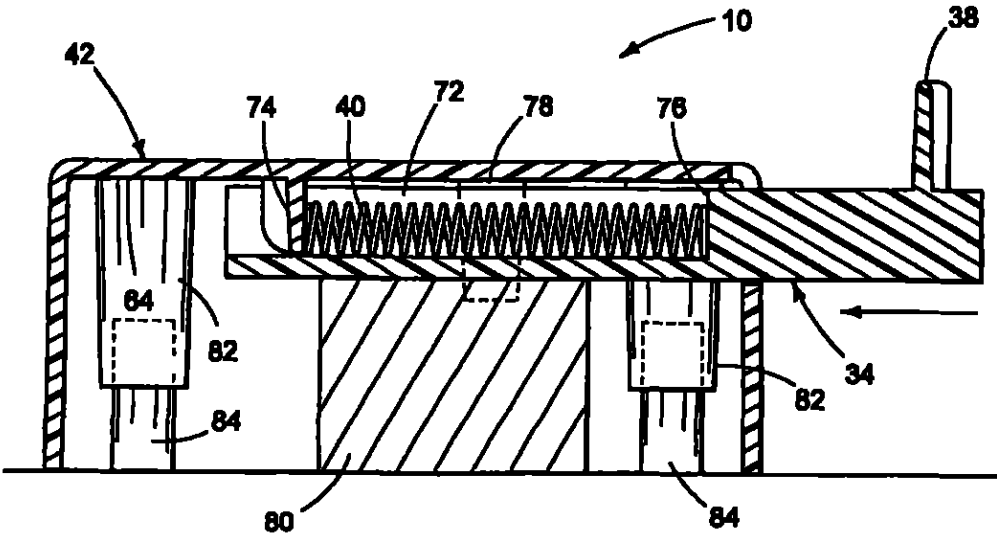


FIG 8

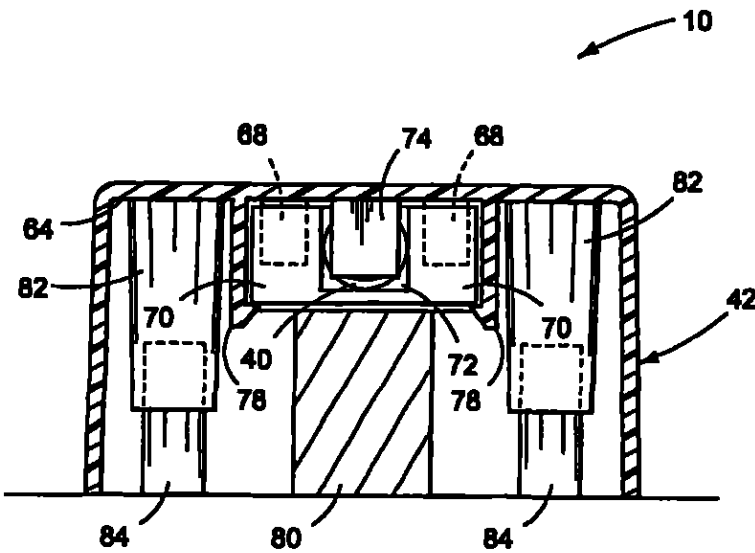


FIG 9

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BATTERY RETAINING SYSTEM FOR CHILDREN'S RIDE-ON VEHICLES

FIELD OF THE INVENTION

The present invention is directed to children's ride-on vehicles, and more particularly, to a battery retaining system for children's ride-on vehicles.

BACKGROUND

Battery-powered children's ride-on vehicles are a popular toy for children. The batteries for these vehicles are usually carried within a compartment on the vehicle. Typically the compartment is easily accessible so that the battery may be removed, such as for replacement or recharging.

To prevent injury or accident, the battery should be securely held within the compartment. If a battery overturns or becomes displaced within the compartment, the battery and/or the vehicle may be damaged. For example, the vehicle typically includes electrical wiring that connects the battery to one or more battery-powered components on the vehicle. An overturned battery may damage or displace the wiring, causing an electrical short or similar hazard. Further, a battery which is not secured within the battery compartment may fall out of the compartment and possibly injure the rider.

One method of securing the battery is to construct a battery compartment that is approximately the same shape and size as the battery. However, the battery may still be unintentionally removed from the compartment, such as if the vehicle tips over. Furthermore, future battery designs would be limited by the dimensions of the compartment.

Another securing method is to install a battery retaining device on the vehicle to hold the battery in place by clamping across the battery. However, prior retaining devices have been difficult to use, have required tools to attach or remove, and/or have been prone to becoming dislodged from the battery, thereby allowing the battery to move. Also, because it is removable, the device may be lost or simply not reinstalled because of the time and effort required to reinstall the device.

SUMMARY

The present invention provides a battery retaining system for a children's ride-on vehicle. The battery retaining system includes a retaining member that is selectively movable between a first, or nominal, position in which the retaining member blocks removal of a battery assembly from the body of the vehicle, and a second position in which the retaining member does not block removal of the battery assembly. The battery retaining system also includes a biasing member coupled to the retaining member and configured to urge the retaining member from the second position toward the first position.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic, front isometric view of a children's ride-on vehicle having a battery retaining system in accordance with the present invention.

FIG. 2 is a magnified, fragmentary view of the vehicle of FIG. 1 showing details of the battery retaining system.

FIG. 3 is similar to FIG. 2 but shows the retaining member of the battery retaining system in its second or retracted position.

FIG. 4 is a fragmentary side elevation view of the battery retaining system of FIG. 2.

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FIG. 5 is a fragmentary isometric view of a different vehicle having an alternative arrangement of the battery retaining system of FIG. 1.

FIG. 6 is an isometric view of another embodiment of the battery retaining system according to the present invention.

FIG. 7 is a fragmentary top plan view of the battery retaining system of FIG. 6.

FIG. 8 is a cross-sectional view taken generally along the line 8-8 in FIG. 6.

FIG. 9 is a cross-sectional view taken generally along the line 9-9 in FIG. 7.

DETAILED DESCRIPTION AND BEST MODE OF THE INVENTION

A battery retaining system according to the present invention is indicated generally at 10 in FIG. 1. System 10 is configured for use on a vehicle 12 having a battery assembly 14. The battery assembly is adapted to power one or more battery-powered components of vehicle 12. At least a portion of battery-retaining system 10 is selectively positionable to prevent battery assembly 14 from becoming dislodged during operation of the vehicle.

In the exemplary embodiments described below, vehicle 12 is depicted as a children's ride-on vehicle in the form of a truck. However, it will be appreciated that battery retaining system 10 may be configured for use on any type of children's ride-on vehicles having one or more battery-powered components. Therefore, the invention is not limited to the particular exemplary embodiments depicted and described herein, but includes all such children's ride-on vehicles. For example, vehicle 12 may take any one of a variety of different forms adapted to simulate real vehicles in reduced scale, including a car, truck, bus, motorcycle, carriage, tractor, construction equipment, etc.

Children's ride-on vehicle 12 includes a support frame or body 16 sized and configured to carry a child, or pair of children. Body 16 is typically formed of a plurality of molded, rigid plastic parts secured together by screws, nuts, bolts, and similar fasteners. It should be understood that body 16 may be formed of any other suitable materials. Depending on the particular form, body 16 may include one or more seats 18 sized to receive a child.

Vehicle 12 also includes wheels 20 rotatably coupled to body 16 and a drive assembly 22 coupled to drive at least one of the wheels. Any suitable mechanism for drive assembly 22 may be used, as is known in the art. While the drive assembly is illustrated in FIG. 1 as being coupled to the front wheels, it will be appreciated that the drive assembly may be coupled to drive one or both of the rear wheels instead of or in addition to the front wheels. Drive assembly 22 may be directly coupled to the wheels, or may be indirectly coupled through one or more linkages, gears, axles, etc. In the exemplary embodiment, drive assembly 22 includes a battery-powered motor assembly 24 having one or more motors adapted to drive the wheels. Motor assembly 24 may also be configured to power other movable components on vehicle 12 depending on the form of the vehicle. For example, the motor assembly may be coupled to raise and lower the blade of a bulldozer or the bed of a dump truck, etc.

In any event, motor assembly 24 is operably connected to battery assembly 14 by suitable connectors such as cables, wires, etc. Vehicle 12 may include one or more control elements such as pedal 26 which are connected to battery assembly 14 and/or motor assembly 24. Pedal 26 is operable

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by the rider to control the motor assembly and therefore, the operation of the wheels. Typically, vehicle 12 includes control elements to enable the rider to control both the speed and direction of the motor assembly. In addition to pedal 26 any other type of control element suitable for use on a children's ride-on vehicle may be used, including buttons, switches, levers, knobs, etc.

Vehicle 12 includes a steering mechanism such as steering wheel 28 coupled to steer at least one of wheels 20. Alternatively, the steering mechanism may take any other form suitable for operation by a child including handle-bars, etc. In the exemplary embodiment steering wheel 28 is operable by the rider to control the direction of the front wheels, which are also the wheels driven by drive assembly 22. Alternatively the steering mechanism may be configured to steer one or more wheels which are not driven by the drive mechanism.

Battery assembly 14 may be any type of battery assembly suitable for use with a children's ride-on vehicle. Typically battery assembly 14 includes one or more 6-volt and/or 12-volt rechargeable batteries adapted for powering drive assembly 22. Alternatively other types of batteries may be used which have either the same or different voltages. In any event, the battery assembly is usually mounted in a battery storage region of body 16 such as battery compartment 30. It will be appreciated that the battery compartment may take any of a variety of different shapes, sizes and configurations depending on the form of vehicle 12, as well as the size and shape of battery assembly 14. In the exemplary embodiment, battery compartment 30 is formed as a part of body 16 adjacent the front of the vehicle. Alternatively the battery compartment may be disposed at any other desired location on body 16.

Typically battery compartment 30 includes at least one opening 32 through which the battery assembly may be passed into and out of the battery compartment. Exemplary battery compartment 30 has four side walls and a bottom wall which are generally sized, shaped and arranged to receive battery assembly 14 and prevent substantial lateral movement of the battery assembly. Opening 32 forms the upper portion of the battery compartment and allows the battery assembly to be lowered into and raised out of, the battery compartment. While the opening extends entirely between each side wall of the exemplary battery compartment to form the upper boundary or "wall" of the battery compartment it will be appreciated that opening 32 may alternatively be smaller in size and may be formed in any one or more walls of the battery compartment.

Battery-retaining system 10 is mounted on vehicle 12 and positioned to selectively maintain battery assembly 14 within battery compartment 30. In the exemplary embodiment depicted in FIG. 1 the battery-retaining system is mounted on body 16 adjacent opening 32. Alternatively the battery-retaining system may be mounted at any other location suitable for retaining the battery assembly within the battery compartment.

Turning attention now to FIGS. 2-3 battery-retaining system 10 includes a retaining member 34 selectively movable between a first or nominal position and a second or retracted position. When retaining member 34 is in its nominal position, such as shown in FIG. 2, it extends over at least a portion of opening 32 to at least partially obstruct the opening. As a result, retaining member 34 blocks removal of the battery assembly when the retaining member is in the nominal position. In the exemplary embodiment depicted in FIG. 2, retaining member 34 overlies a portion

of the top of battery assembly 14, thereby preventing the battery assembly from moving upward, out of the battery compartment. Similarly if vehicle 12 were to be overturned while retaining member 34 was in the nominal position the retaining member would prevent the battery assembly from moving laterally or falling out of the battery compartment.

When retaining member 34 is in its retracted position such as shown in FIG. 3, it does not block removal of battery assembly 14 from compartment 30. Thus, battery-retaining system 10 allows passage of the battery through opening 32 when the retaining member is in the retracted position. In the exemplary embodiment, retaining member 34 does not extend over a portion of the opening when the retaining member is in the retracted position. However it will be appreciated that in some alternative arrangements, retaining member 34 may continue to extend over a portion of the battery compartment when in the retracted position without blocking removal of the battery assembly. An example of such an arrangement is shown in FIG. 5 in which the battery compartment is substantially larger than the battery.

Retaining member 34 may take any form suitable for holding battery assembly 14 in place. In the exemplary embodiment depicted in FIG. 1 the retaining member is in the form of a generally U-shaped bar or rod. Additionally the retaining member may be constructed out of any suitable material adapted to hold the battery assembly in place including metal (i.e. steel, aluminum etc.) plastic, composite materials etc. It will be appreciated that while one specific embodiment of retaining member 34 is depicted in FIGS. 2-3, the retaining member may take a wide variety of other forms as desired or beneficial for a particular application. As one example an alternative embodiment of retaining member 34 will be described below.

As mentioned above, retaining member 34 is selectively movable between the nominal position and the retracted position by a user. This allows the battery assembly to be quickly and easily installed or removed. Optionally the retaining member may include a retaining portion 36 and a handle portion 38. Retaining portion 36 is adapted to extend adjacent at least a portion of the battery assembly when the retaining member is in the nominal position. Handle portion 38 is adapted to extend away from the opening so that the handle portion is spaced-apart from the battery assembly. This allows a user to easily grip handle portion 38 and move the retaining member as desired.

Battery-retaining system 10 also includes a biasing member 40 configured to urge retaining member 34 toward the nominal position when the retaining member is in the retracted position. This ensures that the retaining member does not accidentally move to the retracted position when vehicle 12 is in operation. Thus, to install or remove the battery assembly the user grips handle portion 38 and moves the retaining member to the retracted position against the urging of the biasing member. Preferably the biasing member is configured to yield in response to a relatively moderate moving force applied by the user. The user then holds the retaining member in the retracted position while installing or removing the battery assembly. Once the user releases the handle portion the retaining member automatically moves to the nominal position under the urging of the biasing member.

It will be appreciated that biasing member 40 may take any one or more of a variety of different forms adapted to urge retaining member 34 toward the nominal position. In the exemplary embodiment, biasing member 40 is in the form of a compression spring coupled to the retaining member.

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member Alternatively spring 40 may be a tension spring, torsion spring, plurality of springs, etc. In any event, spring 40 is coupled to the retaining member so as to be resiliently flexed when the retaining member is moved from the nominal position to the retracted position.

Spring 40 may be coupled to retaining member 34 in any of a variety of different ways. In the exemplary embodiment battery retaining system 10 includes a housing 42 mounted on the body adjacent battery compartment 30 and opening 32. Housing 42 is attached to vehicle body 16 by any suitable fasteners such as screws, bolts, clips, etc. Alternatively, the housing may be integrally formed with the body. In any event, one leg 44 of retaining member 34 is slidably received in housing 42. Spring 40 is disposed within the housing and coupled to leg 44 to urge the retaining member toward the nominal position. Housing 42 is formed to define an elongate spring-chamber 46 configured to receive spring 40. Leg 44 of the retaining member passes through apertures at each end of spring-chamber 46. Spring 40 is generally loosely coiled around the leg between a rear wall 48 of the spring-chamber and a washer 50 mounted on leg 44. Washer 50 abuts against a shoulder 52 formed on leg 44.

In the exemplary embodiment, an end cap 54 is mounted on the end of leg 44. End cap 54 is larger than the aperture in rear wall 48, and prevents leg 44 from sliding forward and out of the spring-chamber. End cap 54 is formed as a press-fit connector such as is known to those of skill in the art. As a result, both retaining member 34 and biasing member 40 are coupled to housing 42 and vehicle body 16 and are not removable from the body without disassembling or breaking the battery retaining system or separating the housing from the body. Thus, in contrast to prior systems which use a detachable retaining member, battery retaining system 10 is easier to use since it is never removed from the vehicle. Furthermore, system 10 is less susceptible to failure due to lost or damaged parts.

As can be seen in FIG. 3, spring 40 is compressed between washer 50 and back wall 48 when the retaining member is moved to the retracted position. Thus, the spring imparts an urging force on the washer and thereby the retaining member as a result of the potential energy stored in the spring. Typically, the spring is somewhat compressed even when the retaining member is in the nominal position so that at least some urging force is imparted to the retaining member to hold it in the nominal position. Optionally, a selectively removable cover 58 may be provided to enclose the spring-chamber and spring to prevent debris from entering the spring-chamber and to protect a child from being accidentally pinched by the spring.

In the exemplary embodiment depicted in FIGS. 2 and 3, the other leg 56 of U-shaped retaining member 34 is slidably received in a molded channel 60 defined by housing 42. Although leg 56 is depicted as being shorter than leg 44, it will be appreciated that the length of leg 56 may alternatively be equal to, or greater than, the length of leg 44. It can be seen that spring-chamber 46 and channel 60 form substantially parallel tracks which guide the movement of legs 44 and 56, respectively. As a result, the retaining member is constrained to move or slide in at least substantially a single direction aligned with spring-chamber 46 and channel 60 toward and away from opening 32. Alternatively, the spring chamber and channel may be configured to guide the movement of the retaining member in other ways.

Turning attention now to FIG. 4, it can be seen that retaining member 34 is disposed to slide in a direction

generally parallel with the top side 62 of battery assembly 14. It will be appreciated that retaining system 10 may be configured relative to the height of battery assembly 14, so that retaining portion 36 rests in contact with top side 62 when the retaining member is in the nominal position. Alternatively, the retaining portion may extend above top side 62 without contacting the battery assembly. This latter configuration is shown in FIG. 4 by the battery assembly which has a top side indicated in dash lines.

Regardless of whether the retaining portion contacts the top of battery assembly 14, it will be appreciated that the urging force imparted to the retaining member by spring 40 is along a direction parallel with top side 62. Thus, in contrast to prior art systems, retaining member 34 is configured not to transfer the urging force of the spring onto the battery assembly. This relieves the battery assembly of a source of long-term pressure that may damage the battery assembly. Alternatively, the battery retaining system may be configured to transfer some or all of the urging force to the battery.

It will be appreciated that battery retaining system 10 may be arranged in a variety of different ways depending on the particular configuration of vehicle 12, battery compartment 30, and battery assembly 14. For example, FIG. 5 illustrates an alternative arrangement in which retaining member 34 is oriented so that the end regions of the U-shaped member extend spaced apart from the battery assembly while the central region extends downward toward the top of the battery assembly. In contrast to the embodiment depicted in FIGS. 2-4, therefore, the central region of the retaining member forms retaining portion 36 while the end regions form handle portion 38. Nevertheless, retaining member 34 is selectively slidable away from opening 32 to allow passage of battery assembly 14 into or out of battery compartment 30. A biasing member such as described above urges the retaining member from a retracted position away from opening 32 to a nominal position obstructing the opening.

As also shown in FIG. 5, exemplary battery assembly 14 includes a socket 39 adapted to engage a plug and cable assembly 41. Assembly 41 is coupled to motor assembly 24 (not shown) to carry electrical power from the battery assembly to the motor assembly. Alternatively, vehicle 12 may include other mechanisms for conducting electrical power from the battery assembly to the motor assembly. The arrangement illustrated in FIG. 5 also includes a battery compartment 30 that is substantially larger than battery assembly 14. Thus, the side walls of the battery compartment may not sufficiently support the battery assembly against lateral movement within the compartment. Instead, the exemplary battery compartment of FIG. 5 includes one or more mounts 43 positioned to extend adjacent one or more sides of the battery assembly and prevent lateral movement of the battery assembly within the battery compartment.

Turning attention now to FIGS. 6-9, an alternative embodiment of battery retaining system 10 is shown. Retaining member 34 is in the form of a generally rectangular bar slidably received in housing 42. Alternatively, retaining member 34 may be formed to have any other suitable shape as desired. In the depicted embodiment, retaining member 34 is formed as a molded plastic structure but may alternatively be formed in other ways and/or from other materials. In any event, the retaining member includes a retaining portion 36 which extends generally parallel to the top side of battery assembly 14.

In its nominal position shown in FIG. 6, retaining portion 36 extends toward battery compartment 30 to at least

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partially obstruct opening 32 and block installation or removal of the battery assembly. The retaining member is depicted as overlying a generally central portion of the battery assembly to better obstruct the opening. However it will be appreciated that the retaining member may alternatively be configured to overlap other portions of the battery assembly. The relatively wide and flat shape of the retaining portion also provides stable support to the battery assembly in the event the vehicle is overturned. Handle portion 38 is configured to be gripped by a user to move the retaining member to a retracted position within the housing. The handle portion may be formed in a variety of alternative shapes suitable for gripping. One example of an alternative shape is indicated by dash lines in FIG. 7.

Retaining member 34 is received through an aperture in housing 42 and extends generally parallel to an upper inner surface 64 of the housing. The rear portion of the retaining member includes a pair of elongate guide slots 66 adapted to receive guide members 68. The guide members extend downward from upper inner surface 64 and into guide slots 66. Members 68 are slidable within slots 66 to substantially constrain the movement of retaining member 34 to a single direction. Each guide slot includes opposing end walls 70 which limit the length of travel of the retaining member thereby preventing the retaining member from sliding out of housing 42.

Alternative retaining member 34 is also formed to define a spring chamber 72 between guide slots 66. Spring chamber 72 is adapted to receive a spring 40 or other suitable biasing member. The spring is enclosed within chamber 72 by upper inner surface 64. A bulkhead 74 extends downward from the upper inner surface into spring chamber 72. Spring 40 is positioned between bulkhead 74 and the front wall 76 of the spring chamber. When the retaining member is moved toward its retracted position as shown in FIG. 7, front wall 76 moves toward bulkhead 74, thereby compressing spring 40. As a result, the spring urges the retaining member back toward its nominal position.

Retaining member 34 is held adjacent upper inner surface 64 by one or more clips 78 which extend downward from the upper inner surface along the sides of the retaining member. Each clip includes an inwardly projecting lip that slidably supports the underside of the retaining member. The retaining member is also held adjacent the upper inner surface of housing 42 by a base member 80. The housing is mounted to body 16 above base member 80 which extends upward from the body to a position beneath retaining member 34 and prevents the retaining member from moving away from upper inner surface 64. Alternatively, the retaining member may be held adjacent the upper inner surface of the housing by other mechanisms.

In the alternative embodiment depicted in FIGS. 6-9, housing 42 includes a plurality of mounting sleeves 82. The mounting sleeves are adapted to fit over posts 84. Each sleeve 82 is adapted to receive a screw or similar fastener (not shown), which extends into and engages threaded bores (not shown) in posts 84. Thus, retaining member 34 and biasing member 40 cannot be removed from the body without disassembling or breaking the retaining system. Alternatively, the housing may be mounted on body 16 in other ways known to those of skill in the art.

As described above, battery retaining system 10 provides a reliable system for preventing a vehicle battery assembly from becoming dislodged during operation of the vehicle. Furthermore, system 10 is configured to allow the battery assembly to be installed or removed easily and without the

use of tools. While various alternative embodiments and arrangements of battery retaining system 10 have been shown and described above, it will be appreciated by those of skill in the art that numerous other embodiments, arrangements, and modifications are possible and, therefore, within the scope of the invention.

It is believed that the disclosure set forth above encompasses multiple distinct inventions with independent utility. While each of these inventions has been disclosed in its preferred form, the specific embodiments thereof as disclosed and illustrated herein are not to be considered in a limiting sense as numerous variations are possible. The subject matter of the inventions includes all novel and non-obvious combinations and subcombinations of the various elements, features, functions and/or properties disclosed herein. Where the claims recite "a" or "a first" element or the equivalent thereof, such claims should be understood to include incorporation of one or more such elements, neither requiring nor excluding two or more such elements.

It is believed that the following claims particularly point out certain combinations and subcombinations that are directed to one of the disclosed inventions and are novel and non-obvious inventions embodied in other combinations and subcombinations of features, functions, elements and/or properties may be claimed through amendment of the present claims or presentation of new claims in this or a related application. Such amended or new claims, whether they are directed to a different invention or directed to the same invention, whether different, broader, narrower or equal in scope to the original claims, are also regarded as included within the subject matter of the inventions of the present disclosure.

We claim:

1. A children's ride-on vehicle comprising:

a vehicle body adapted to carry a child;

a plurality of wheels coupled to the body;

a drive assembly coupled to drive at least one of the wheels, the drive assembly including a motor assembly having one or more battery-powered motors;

a battery assembly disposed on the body and operably connected to the motor assembly; and

a battery retainer assembly mounted on the body, including

a retaining member selectively movable between a first position in which the retaining member blocks removal of the battery assembly from the body and a second position in which the retaining member does not block removal of the battery assembly from the body; and

a biasing member coupled to the retaining member and configured to urge the retaining member from the second position toward the first position.

2. The vehicle of claim 1, where the body includes a battery compartment adapted to hold the battery assembly and where the battery compartment has an opening, and where the retaining member at least partially obstructs the opening when in the first position.

3. The vehicle of claim 2, where the opening is adapted to allow the battery assembly to be lowered into and raised out of the battery compartment, and where the retaining member at least partially overlies a top portion of the battery assembly when the battery assembly is in the battery compartment and the retaining member is in the first position.

4. The vehicle of claim 3, where the biasing member is configured to impart an urging force on the retaining member to urge the retaining member toward the first position.

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and where the retaining member is configured not to transfer the urging force to the battery assembly

5 The vehicle of claim 4, where the retaining member is configured not to contact the battery assembly when the battery assembly is in the battery compartment and the retaining member is in the first position

6 The vehicle of claim 1 where the retaining member is slidably coupled to the body for movement substantially constrained to a single direction relative to the body

7 The vehicle of claim 1 where the retaining member is unremovably coupled to the body

8 The vehicle of claim 7 where the biasing member is unremovably coupled to the body

9 The vehicle of claim 1 where the biasing member includes a spring.

10 The vehicle of claim 1 where the retaining member includes a retaining portion adapted to extend adjacent at least a portion of the battery assembly when the retaining member is in the first position and a handle portion spaced apart from the battery assembly and adapted to be gripped by a rider to move the retaining member from the first position to the second position against the urging of the biasing member

11 A children's ride-on vehicle having one or more battery-powered components, the vehicle comprising,

a vehicle body

a battery assembly having at least one battery,

a battery compartment disposed on the vehicle body and adapted to hold the battery assembly where the battery compartment includes at least one opening adapted for passage of the battery assembly into or out of the battery compartment, and

a battery retainer assembly disposed adjacent the battery compartment, the battery retainer assembly including a retaining member connected to a biasing member

where the retaining member is selectively movable from a nominal position which obstructs the opening to prevent passage of the battery assembly to a retracted position which allows passage of the battery assembly through the opening, and

where the biasing member is configured to urge the retaining member toward the nominal position when the retaining member is in the retracted position

12 The vehicle of claim 11 where the retaining member is unremovably connected to the body

13 The vehicle of claim 11 where the retaining member is coupled to the body and constrained to slide along a single direction between the nominal position and the retracted position

14 The vehicle of claim 13 where the retaining member is constrained to slide along a single direction generally parallel with a top side of the battery assembly when the battery assembly is in the battery compartment.

15 The vehicle of claim 11 where the opening forms an upper portion of the battery compartment and where the

retaining member at least partially overlies a top portion of the battery assembly when the battery assembly is in the battery compartment and the retaining member is in the nominal position

16 The vehicle of claim 15, where the retaining member is configured not to impart downward pressure on the battery assembly when the battery assembly is held within the battery compartment and the retaining member is in the nominal position

17 The vehicle of claim 11 where the retaining member includes a retaining portion adapted to extend adjacent at least a portion of the battery assembly when the retaining member is in the nominal position and a handle portion spaced apart from the battery assembly and adapted to be gripped by a rider to move the retaining member from the nominal position to the retracted position against the urging of the biasing member

18 The vehicle of claim 11 where the battery retainer assembly includes a housing mounted on the body and adapted to slidably receive at least a portion of the retaining member and where the biasing member includes a spring disposed within the housing.

19 A children's ride-in vehicle comprising,

a battery assembly having one or more batteries,

a vehicle body adapted to carry a child the body including a battery compartment adapted to hold the battery assembly and having at least one opening through which the battery assembly may be passed,

one or more wheels coupled to the body

a drive assembly coupled to drive at least one of the wheels, the drive assembly including a motor assembly having one or more battery-powered motors operably connected to the battery assembly

a retaining member coupled to the body and positioned to extend over at least a portion of the opening to obstruct passage of the battery assembly and

a biasing member coupled to the retaining member where the retaining member is selectively slidable away from the opening against the urging of the biasing member

20 The vehicle of claim 19 further comprising a housing mounted on the body, and where at least a portion of the retaining member is received in the housing and slidable within the housing generally along a single direction

21 The vehicle of claim 20 where the biasing member is disposed in the housing and configured to urge the retaining member toward the opening.

22 The vehicle of claim 21 where the housing includes a cover adapted to enclose the biasing member

23 The vehicle of claim 20 where the retaining member includes a handle portion extending away from the opening and adapted to be gripped by a rider to slide the retaining member away from the opening.

* * * * *

Expediente No		03-038670	No de Folio
Item		No de unidades	✓
1	CD		
2	DVD		
3	REVISTA		
4	LIBRO		
5	PERIODICO		
6	DISQUETES		
7	SOBRE DE MANILA	1	✓
8	SOBRE BLANCO TAMAÑO CARTA		
9	SOBRE BLANCO TAMAÑO OFICIO		
10	OTROS		

Observaciones sobre contenido arte final

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CAVELIER

ABOGADOS
BOGOTÁ, COLOMBIA

For patents, utility designs, trademarks, service marks, commercial names, insignia

Para patentes, modelos y dibujos industriales, marcas de fábrica y de servicio, nombres comerciales y enseñas.

REPRESENTACION Y PODER

REPRESENTATION AND POWER OF ATTORNEY

X (we), the undersigned / Yo (nosotros), abajo firmado(s)
MATTEL, INC.
of / domiciliado(s) en 333 Continental Blvd ,
El Segundo, California 90245-5012 U.S.A

por el presente nombramos a GERMAN CAVELIER, tpa. 832, GONZALO PERDOMO, tpa. 831, ERNESTO CAVELIER, tpa. 11519 y EMILIO FERRERO, tpa. 31929, domiciliados en la Carrera 4ª N° 72-35, Bogotá, Colombia, en obediencia a lo dispuesto en el párrafo 1º del Artículo 543 del Código de Comercio, el primero como principal y los demás como suplentes, en su orden, como nuestros representantes en todos los asuntos de propiedad industrial con facultad para recibir notificaciones y nombrar apoderados judiciales o extrajudiciales. El primer representante suplente reemplazará al principal en caso de ausencia o impedimento temporal o definitivo de aquél. La misma regla se aplicará cuando el segundo representante suplente haya de reemplazar al primero, o el tercero al segundo. En tales casos el representante principal, o el primero, o segundo suplente, en su caso, o ambos, declararán su intención de no ejercer la representación mediante declaración autenticada por Notario Público en Colombia, o por Notario u otro Funcionario Público, o Cónsul de Colombia, en el extranjero, y si se tratare de impedimento, con el certificado respectivo. Si alguno de los nombrados faltare definitivamente, el siguiente tomará su lugar. Cuando cesare la ausencia o impedimento del representante principal, o de su primero o segundo suplente, en su caso podrán ejercer la representación, en su orden, uno u otros según el caso, asumiéndola por el solo hecho de ejercerla, cesando en ese momento el ejercicio de la representación por el primero, segundo o tercer suplente en su caso. Además, y bajo las mismas reglas, conferimos poder a los abogados arriba nombrados, para obtener la protección de mi (nuestra) propiedad industrial y contra la competencia desleal, a cuyo efecto autorizo(amos) a los dichos apoderados para que me(nos) representen ante cualesquiera entidades o personas, ejerzan o no jurisdicción, especialmente ante las del orden administrativo, contencioso-administrativo y judicial en todo lo concerniente a los siguientes asuntos: a) Obtención de patentes de invención, modelos y dibujos industriales el registro de marcas de fábrica, colectivas, defensivas y de servicios, el depósito de nombres comerciales y enseñas su renovación, traspaso, cambio de nombre o domicilio, cancelación voluntaria, y el registro de licencias de uso de esos derechos b) Las acciones de oposición, cancelación, nulidad, medidas cautelares, concesión de licencias y en general los juicios civiles, penales, administrativos o contencioso-administrativos relacionados con estos derechos acciones y juicios que promovamos o se nos promuevan. Y para que en todos los asuntos arriba determinados, puedan sustituir este mandato, transigir, desistir, cancelar, recibir, renunciar y ratificar los actos hechos por agentes oficiales.

in due compliance with the terms of paragraph 1st. of article 543 of the Commercial Code, do hereby appoint GERMAN CAVELIER, tpa. 832, GONZALO PERDOMO, tpa. 831, ERNESTO CAVELIER, tpa. 11519, and EMILIO FERRERO tpa. 31929, domiciled at Carrera 4ª N° 72-35, Bogotá, Colombia, the first as principal and the others as alternates, in the order of their appointment, as our representatives for all industrial property matters with faculty to receive notifications and to appoint attorneys in and out of Court. The first alternate shall replace the principal in case of his absence or temporal or definitive impediment. The same rule will apply when the second alternate representative is to replace the first one, or when the third is to replace the second. In such cases, the principal representative, or the first or second alternates in their turn, or both of them, shall state their intention not to act as representatives through a declaration given before a Notary Public in Colombia, or before a Notary or another Public Official or a Colombian Consul abroad, and in case of impediment, the appropriate certificate shall suffice. If any of the appointees were to be definitely absent, the following alternate shall take his place. When the absence or impediment of the principal representative or of the first or second alternate in their turn ceases, the representation can be taken again in their sequence, by the principal, the first or second alternate depending on case, and the mere fact of its exercise will suffice. The exercise of the representation by the first, second or third alternates in their turn shall end at such time. In addition, we grant a Power of Attorney in favor of the above-named attorneys-at-law so that they may obtain the protection of my (our) industrial property and against the unfair competition, for which purpose I (we) authorize the said attorneys to represent me (us) before any authorities or persons, with or without jurisdiction, specially those administrative, administrative contentious and judicial, in all matters concerning the following: a) Obtainment of patents, models and designs, the registration of trademarks, collective, defensive and service marks, the deposit of commercial names and insignia, its renewal, assignment, change of name or domicile voluntary cancellation and the registration of licenses of use of the above rights, b) Actions of opposition, cancellation, nullity, infringement, and measures of protection in general the civil, penal, administrative and judicial, relating to those rights, actions and matters instituted by me (us) or against me (us). And that in all the above matters they may substitute this Power of Attorney, compromise, desist, cancel, receive, resign, and ratify acts done by representatives without a power of attorney.

Given and signed this / Dado y firmado hoy
8th day of August
in / en El Segundo, California

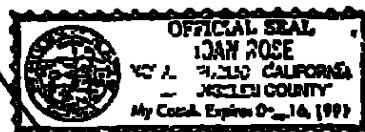
MATTEL, INC
Firma *Stephen L. Hartley* Signature

Stephen L. Hartley, Assistant Secretary

(Notary should execute on other side)
(Consular legalization necessary)

TRADUCCION OFICIAL No. 533/91
ALICIA GPOON
INTERPRETE OFICIAL
RESOLUCION No. 2193 ABRIL 17 1990
DEL MINISTERIO DE JUSTICIA.

PABLO MENDEZ DARAÑAS
NOTARIO(E)



CERTIFICADO NOTARIAL (INDIVIDUO)

A los dias del mes de de 19
ante mí, Notario Público de
compareció(eron) persona'mente

a quien(es) doy fe de conocer y me consta que es (son)
la(s) persona(s) firmante(s) del documento que pre
cede, y quien(es) tiene(n) capacidad legal para otor
garlo

Notario Público — Notary Public

NOTARIAL CERTIFICATE (INDIVIDUAL)

On this 6th day of August 1991
before me, a Notary Public of
Los Angeles County, State of
California, that Stephen L
Hartley is

to me known, and known to me to be the person(s)
who executed that foregoing document, and who has
(hace) legal capacity to execute it.

Joan Rose
Joan Rose

CERTIFICADO NOTARIAL (SOCIEDAD)

Hoy 6 de agosto re 1991
compareció(eron) ante mí Stephen L Hartley

a quien(es) conozco personalmente y que firma(n)
este documento en representación de la Sociedad/Com
pañía denominada MATTEL, INC.

Certifico

1 Que he visto los siguientes documento *
Certificado de Constitución confir
mado de MATTEL, INC

2 Que dichos documentos prueban lo siguiente

2 1 Que MATTEL, INC
es una Sociedad/Compañía constituida y
existente de acuerdo a las leyes del Estado de
Delaware

2 2 Que el domicilio de dicha Sociedad/Compañía es
333 Continental Blvd, El Segundo,
California

2 3 Que el objeto u objeto, para los cuales se otorga
el presente poder es en comprendidos dentro del ob
jeto social de la mencionada Sociedad/Compañía

2 4 Que el Sr Stephen L Hartley

esta(X) autorizado(s) para otorgar el presente Poder
Ciudad El Segundo
Estado California
Hoy 6 de agosto de 1991

Notario Público — Notary Public

* Documents must be identified with date and origin

NOTARIAL CERTIFICATE (CORPORATION)

On this 6th day of August 1991
appeared before me Stephen L. Hartley

who(m) I know personally and who(m) signed this do
cument as representative(s) of the Corporation/Com
pany named MATTEL, INC.

I Certify

1 That I have seen the following documents *

RESTATED CERTIFICATE OF
INCORPORATION OF MATTEL, INC

2 That the above documents duly prove the follow
ing

2 1 That MATTEL, INC.

is a Corporation/Company legally constituted and in
existence in accordance with the laws of
the state of Delaware

2 2 That the domicile of said Corporation/Company is
333 Continental Blvd
El Segundo California

2 3 That the purpose of purposes for which the pre
set Power of Attorney is granted are comprised
within the corporation purposes set forth in the char
ter of the mentioned Corporation/Company

2 4 That Mr Stephen L Hartley

is(are) authorized to grant the present Power of
Attorney

City El Segundo

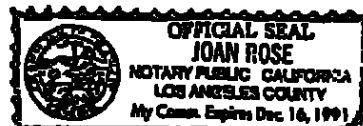
State California

This 6th day of August 1991

Joan Rose

* Los documentos deben identificarse con fecha y origen.

TRADUCCION OFICIAL No. 333/91
ALICIA GROOT
INTERPRETE OFICIAL
RESOLUCION No. 2193 APL 17 1987
DEL MINISTERIO DE JUSTICIA



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STATE OF CALIFORNIA
COUNTY OF LOS ANGELES

CHARLES WEISSBURD Registrar Recorder/County Clerk of the County of Los Angeles, State of California a public entry having by law a seal do hereby certify that Joan Rose whose name is subscribed to the annexed

acknowledgment proof or affidavit, was at the time of signing same a Notary Public FOR LOS ANGELES COUNTY duly commissioned and sworn, with principal place of business or employment in said County and was, as such an officer of said State duly authorized by the laws thereof to execute the same as well as to execute the proof and acknowledgment of deeds and other instruments of writing to be recorded in said State to take depositions and/or affidavits, and to administer oaths or affirmations, in any County in this State and that full faith and credit are and ought to be given to said officer's official acts, that the proof or certificate of such officer is required to be under seal that the impression of the official seal of said officer is not required by law to be on file in the office of the County Clerk, I further certify that I am well acquainted with the handwriting of said officer and verily believe that the signature to the attached document is genuine and further that the annexed instrument is executed according to the laws of the State of California

Signed and seal of aforesaid County affixed at Los Angeles

on AUG 07 1991
Charles Weissburd
Charles Weissburd Registrar Recorder/County Clerk of the County of Los Angeles, State of California

TRADUCCION OFICIAL No. 333/91
ALICIA GROSS
INTERPRETE OFICIAL
RESOLUCION No. 3193, ABRIL 17 1988
DEL MINISTERIO DE JUSTICIA

78CS25/R1-81

COMO NOTARIO SEXTO (E) DEL CIRCULO
SE BOBOTA, HAGO CONSTAR QUE LA
FOTOCOPIA COINCIDE CON EL ORIGINAL
QUE HE TENIDO A LA VISTA
08 MAY 2003

[Handwritten signature]

CONSULADO DE COLOMBIA No 2073

(6) Angela Ca Agosto 8/91

Lugar y fecha

SUSCRITO CON EL DE COLOMBIA

CERTIFICA

el señor Charles W. W. W.

autoriza el presente documento,

para legalmente en la fecha allí

firmada, las siguientes

Angela Ca en el documento

que la firma y el sello son los que

no aparecen en los actos oficiales,

y acostumbra en los actos oficiales,

CONSUL NO ASUME RESPONSABILIDAD

ALGUNO POR EL CONTENIDO DEL

DOCUMENTO

Firma y sello

Angela Ca

Maria Helena B e Cruz

Viceconsul de Colombia

CONSULADO DE COLOMBIA

LOS ANGELES

214

SECRETARIA DE RELACIONES EXTERIORES

SECRETARIA DE NEGOCIOS GERALES

HACE CONSTAR

que el presente documento,

firmado por el señor

Angela Ca, en la fecha allí

firmada, es una copia fiel del

original que se encuentra en el

archivo de la oficina de la

Secretaria de Relaciones Exteriores,

en Bogotá, el día 26 de Agosto de 1991.

BOGOTA,

26 de Agosto de 1991

SECRETARIA DE RELACIONES EXTERIORES

SECRETARIA DE NEGOCIOS GERALES

HACE CONSTAR

que el presente documento,

firmado por el señor

Angela Ca, en la fecha allí

firmada, es una copia fiel del

original que se encuentra en el

archivo de la oficina de la

COMO NOTARIO PUBLICO (N) DEL CIRCULO
DE BOGOTA, MAGO CONSTAR QUE LA
FOTOCOPIA CONVIENE CON EL ORIGINAL
QUE ME TENGO A LA VISTA
08 MAY 2003

143

88417 Ar' Chile
OCT 3 1991



DECLARACION Y PAGO DEL IMPUESTO DE TIMBRE NACIONAL

BANCO REAL DE COLOMBIA

08-059-01-006032-0

DATOS GENERALES	① Administración de Ingresos de: SANTA FE DE BOGOTÁ		Código [0,3]	② Teléfono 2120100
	③ Documento de identificación (marque X) C.C. & T.I. ☐ C ☒ NIT ☐ A ☒ X No. 860 041 367		D.V. ☒ 3	④ Apellidos y Nombres o Razón Social de las partes (máximo 60 caracteres). CAVELIER ABOGADOS
	⑤ C.C. & T.I. ☐ C ☒ NIT ☐ A ☒ X No. 19'301.629		D.V. ☐	⑥ Apellidos y Nombres o Razón Social de las partes (máximo 60 caracteres). FORERO ROCHA JAIME
	⑦ Dirección (de la persona o entidad identificada en la casilla 4) Cra 4a No 72-35		Municipio BOGOTÁ	Departamento CUNDINAMARCA
				⑧ Número documentos Instrucción. 1
CONCEPTO	⑨ Relación el/los tipo/s de documento/s, indicando número, fecha, valor y naturaleza de la transacción TIMBRE TRADUCCIÓN OFICIAL No 383/91 DE OCTUBRE 01 DE 1991, PAGO DE LOS DERECHOS DE TRADUCCIÓN DE UN DOCUMENTO DE REPRESENTACIÓN Y PODER.			
⑩	COLO 0573-51-037-7			

FIRMA

Responsable del pago

Nombre

C.C. No. 119 271 251

1	VALOR DEL IMPUESTO A PAGAR	1.200
2	Sanciones	-
3	Intereses de mora	-
4	TOTAL A PAGAR (ranglones 1 + 2 + 3)	1.200

Efectivo ☒ Cheque ☐ No. ☐

\$ 1.200 \$ *1.200* Código Rang. ☐

DEM-21-13-000

CONTRIBUYENTE

WY 100210

NOTARIO BERTO (B) DEL CIRCULO
 BOGOTA HAGO CONSTAR QUE LA
 PROPIA MUNICIPA COPIA ORIGINAL
 QUE ME TRUBO LA VOTO
 08 MAY 2003
 PABLO MUÑOZ PARAJAS
 (04101)

25-
144

TRADUCCION OFICIAL No 333/91 de un documento escrito en Inglés, el cual para su identificación se sella con el sello del traductor lo mismo que la presente -----

Autenticaciones que se hallan a continuación de un documento de Representación y Poder, escrito en Inglés y en Español, otorgado por la sociedad MATTEL, INC a los doctores GERMAN CAVELIER, GONZALO PERDOMO, ERNESTO CAVELIER y EMILIO FERRERO

Dado y firmado el día 8 de agosto de 1991, en El Segundo, California

MATTEL, INC

(firmado) Stephen L Hartley

Stephen L Hartley, Secretario Adjunto

(El Notario debe firmar al dorso)

(Es necesaria la legalización Consular)

Al dorso, escrito en Inglés y en Español, Certificado Notarial (Sociedad), referente a la firma del señor Stephen L Hartley, en representación de la sociedad denominada MATTEL, INC

Otorgado en la ciudad de El Segundo, Estado de California, el día 6 de agosto de 1991

(firmado) Joan Rose

Notaria Pública

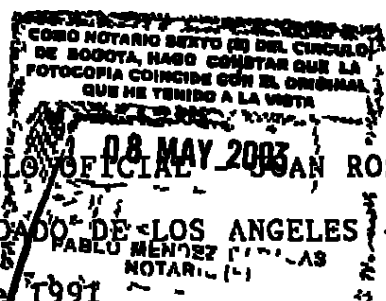
Hay un sello en tinta que dice SELLO OFICIAL JOAN ROSE - NOTARIA PUBLICA - CALIFORNIA - CONDADO DE LOS ANGELES - Mi Comisión vence el 16 de diciembre de 1991

Anexo hay un certificado que dice

ESTADO DE CALIFORNIA

CONDADO DE LOS ANGELES

Yo, CHARLES WEISSBURD, Registrador y Escribano del Condado del Condado de Los Angeles, Estado de California,



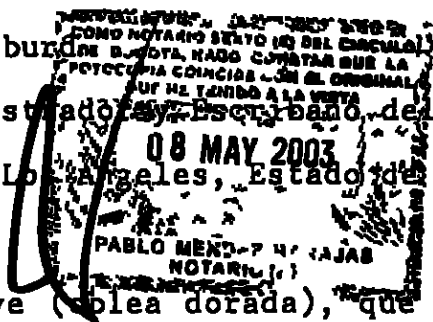
333/91
INTERPRETE OFICIAL
RESOLUCION No 2185 AÑO L 17, 1988
DEL MINISTERIO DE JUSTICIA

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145

entidad pública que tiene por ley un sello, por medio del presente certifico que JOAN ROSE, cuyo nombre está suscrito en el adjunto reconocimiento, prueba o declaración juramentada, era en el momento de firmarlo, Notaria Pública PARA EL CONDADO DE LOS ANGELES, debidamente comisionada y juramentada, con la principal sede de negocios o empleo en dicho Condado, y era, como tal, funcionaria de dicho Estado, debidamente autorizada por las leyes del mismo para otorgarlo, así como para otorgar la prueba y reconocimiento de escrituras y demás instrumentos escritos que deban registrarse en dicho Estado, tomar declaraciones y/o testimonios, y administrar juramentos o afirmaciones, en cualquier Condado de este Estado, y que plena fe y crédito se dan y deben darse a los actos oficiales de dicha funcionaria, que se requiere que la prueba o certificado de dicha funcionaria esté bajo sello, que no se requiere por ley que la impresión del sello oficial de dicha funcionaria esté registrada en la oficina del Escribano del Condado. Certifico además que estoy suficientemente familiarizado con la letra de dicha funcionaria y verdaderamente creo que la firma en el documento adjunto es auténtica, y además que el instrumento adjunto está otorgado de conformidad con las leyes del Estado de California

Firmado y puesto el sello del Condado mencionado en Los Angeles, el 7 de agosto de 1991

(firmado) Charles Weissburd
Charles Weissburd, Registrador y Escribano del Condado del Condado de Los Angeles, Estado de California



Adherido hay un sello en relieve (hoja dorada), que dice REGISTRADOR/ESCRIBANO DEL CONDADO - CONDADO DE LOS ANGELES - CALIFORNIA

TRADUCCION OFICIAL N. 333/91
AL J. G. COOP
INTERPRETE OFICIAL
RESOLUCION No. 215 APL 17 INC
DEL MIN. ESTADO DE JUSTICIA

247
146

En español, legalizaciones de la firma del señor Charles Weissbourd, hasta por el Ministerio de Relaciones Exteriores de la República de Colombia, bajo el Número 214153, de fecha 26 de septiembre de 1991, firmado por el señor José Angel Aldana, Jefe Negocios Generales

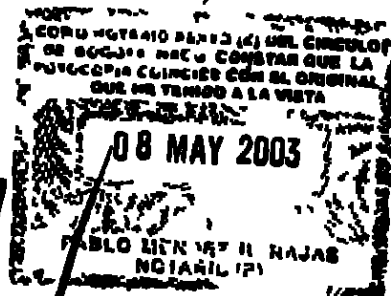
Pagado el Impuesto de Timbre, por la suma de Seis Dólares (US\$6,00)

ES TRADUCCION FIEL Y COMPLETA del documento en referencia
Santa Fe de Bogotá, D C , Octubre 10 de 1991

AG/c

Alicia Ghoo
TRADUCCION OFICIAL No. 333/91
ALICIA GHOOF
INTERPRETE OFICIAL
RESOLUCION No. 2133 ABRIL 17, 1988
DEL MINISTERIO DE JUSTICIA.

No. 22762
MINISTERIO DE RELACIONES EXTERIORES
SECCIÓN NEGOCIOS GENERALES
HACE CONSTAR
Cada firma aparece al pie del presente documento, desempeñaba en la fecha las funciones allí indicadas.
Santa Fe de Bogotá, D. C. 10 OCT. 1991
JOSE ANGEL ALDAN
JEFE NEGOCIOS GENERALES



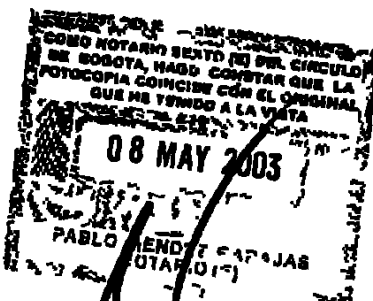
COMO NOTARIA SEXTA DE BOGOTA HAGO CONSTAR QUE LA FIRMA QUE AUTORIZA ESTE DOCUMENTO Y QUE DICE

..... *Alicia Groot*

C C No

ES AUTENTICA
BOGOTA D E

03 OCT 1991



TELEFAX (57) (1) 2338830
TELEX 43479 CAVE CO
12317407375 CAVE UC

CAVELIER

ABOGADOS

EDIFICIO SISKI
CARRERA 4ª No 72 35
BOGOTA 8 COLOMBIA

CORREO ELECTRONICO MUNDIAL CAVE
TELEFONO (57) (1) 2120100
CABLES CAVELEYES

248
147

Señor Jefe de la
DIVISION DE NUEVAS CREACIONES
Superintendencia de Industria y Comercio
E S D

Poderdante MATTEL, INC

Poder conferido el 08-08-91

Yo, GERMAN CAVELIER, obrando en mi calidad de apoderado principal del poderdante arriba mencionado atentamente manifiesto a Usted que sustituyo el poder que me ha sido conferido en la persona del doctor EMILIO FERRERO, Abogado con Tarjeta Profesional No 31 929, con todas las facultades que me fueron conferidas

Hago la anterior sustitución conforme al articulo 66 del Código de Procedimiento Civil ya que los otros sustitutos faltan en este momento

Señor Jefe,



GERMAN CAVELIER

T P A No 832

C C No 2 877 924 de Bogota

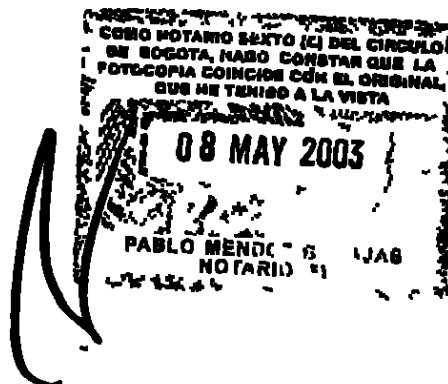
Acepto



EMILIO FERRERO

T P A No 31 929

C C No 438 019 de Usaquen



2e-780-2

CAVELIER ABOGADOS NIT 860.041.367-3

NOTARIA SEXTA DE SANTAFE DE BOGOTA
RECONOCIMIENTO Y PRESENTACION

Antefé de Bogotá D C
Ante MI, PABLO MENDEZ BARAJAS
NOTARIO SEXTO ENCARGADO DEL CIRCULO DE SANTAFE
DE BOGOTA

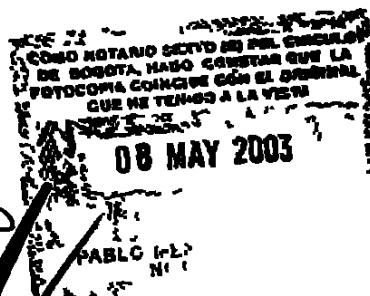
Conpareció(eron)
[Firma] [Firma]
[Firma] [Firma]
quien(es) exhibio(eron) la(s) C C

y la(s) L b m-(s) a lta, (s)

de las huellas en Bogotá de Bogotá y de la(s) firma(s)
que aparece(n) en el presente documento es (son) la(s) suya(s) y que
el contenido del mismo es cierto
Se constata se firma esta diligencia y se imprime huella dactilar

[Firma]

[Firma]



148 7K9

SUPERINDUSTRIA Y COMERCIO
Radicacion 03030670 00000000 Folios: 149
Fecha (MM): 2003-05-08 17:05:12
Tramite : 011 PCT-PATENT 379 FASE NACI 411 PRESENTAC
Dependencia 2020 DIVISION DE NUEVAS CREACIONES

NIT 800176089-2

RECIBO OFICIAL DE CAJA 03 - 29,244
FECHA ABRIL 28 DE 2003

***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No PAGO	FECHA PGO	Vr PAGO
CAVELIER ABOGADOS	CONSIGNACION	BANCO POPULAR	030-00110-6	15534318	28/04/2003	34 562,680 00

***** CONCEPTO *****

CANT	RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1	50005-01-01 SOLICITUDES	1 TRAMITES DE SOL DE PATENTE DE IN	400,000 00
		TOTAL	\$ 400,000 00

SON: CUATROCIENTOS MIL PESOS

RESPONSABLE 

RECIBO DE CAJA APLICADO AL EXPEDIENTE No _____

060 00573-841-002-5

150
149

REQUISITOS NECESARIOS PARA PRESENTACION Y AGILIZACION DEL TRAMITE

	USUARIO	RADICADOR
PATENTE DE INVENCION ✓	()	()
- Indicación de que se solicita la concesión de una patente	()	()
- Datos de identificación del solicitante o de la persona que se presenta la solicitud	()	()
- Descripción de la invención	()	()
- Dibujos de ser estos pertinentes	()	()
- Comprobante de Pago de las tasas establecidas	()	()

COMPLETA () INCOMPLETA ()

DISEÑO INDUSTRIAL ()

- | | | |
|---|-----|-----|
| - Indicación de que se solicita el registro de Diseño Industrial | () | () |
| - Datos de identificación del solicitante o de la persona que presenta la solicitud. | () | () |
| - Representación gráfica y fotográfica del Diseño Industrial o muestra del Material que incorpora el diseño | () | () |
| - Comprobante de pago de las tasas establecidas | () | () |

COMPLETA () INCOMPLETA ()

ESQUEMA DE TRAZADO ()

- | | | |
|---|-----|-----|
| - Indicación de que solicita el registro de un Esquema de trazado | () | () |
| - Datos de identificación del solicitante o de la persona que presenta La solicitud | () | () |
| - Representación gráfica del esquema de trazado | () | () |
| - Comprobante de pago de las tasas establecidas | () | () |

COMPLETA () INCOMPLETA ()

Firma Responsable

ANDREA POSSE

Fecha



2020
Bogotá, D.C.,

Doctor:
EMILIO FERRERO
Apoderado
MATTEL INC.

Oficio N°
08153

ASUNTO:	Radicación N°	03-38870
	Solicitud Internacional	PCT/US2001/48058
	Fecha inicio fase nacional	09/08/2003
	Trámite	011
	Evento	379
	Actuación	430
	Folios	001

Como resultado del examen de forma, realizado con fundamento en el artículo 38 de la Decisión 486 de la Comisión de la Comunidad Andina, artículo 27 del Tratado de Cooperación en Materia de Patentes (PCT), regla 51 bis del Reglamento y Circular Unica de la Superintendencia de Industria y Comercio, se le comunica que:

☐ La solicitud no contiene la copia del documento en que consta la cesión del derecho a la patente del inventor al solicitante o a su causante. (Art. 26-k) Decisión 486)

En cumplimiento de lo dispuesto por el artículo 39 de la Decisión 486, se le requiere para que dentro del término de dos meses siguientes a la fecha de notificación del presente oficio, complete los requisitos anteriormente enunciados. En caso de no dar cumplimiento al presente requerimiento, la solicitud se considerará abandonada y perderá su prelación.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Unica N° 10 de 2001


ALIX CARMONA CESPÉDES DE VERGEL
Jefe de la División de Nuevas Creaciones.

El anterior requerimiento fue notificado por fijación en lista de fecha, 03 OCT 2003